

DISPENSING MADE EASY

SUTHERLAND

SECOND EDITION.



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DISPENSING

MADE EASY:

*With numerous Formulæ, and Practical Hints to secure
Simplicity, Rapidity, and Economy.*

BY

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PREFACE TO THE SECOND EDITION.

THAT a large edition should have been exhausted in such a short time, justifies the contention I ventured to put forward, of the need for such a work. The reception accorded it, by Medical Press and Medical Practitioners alike, has been highly gratifying, and many of the latter have stated how greatly it has added to the efficiency of their surgery work. At the suggestion of some of these gentlemen, several useful formulæ have been added.

The contents have been thoroughly revised and brought up to date, and, although I am all too conscious of faults, of sins of commission and omission alike, yet the present edition will be found a distinct improvement on its predecessor, even if it does not entirely escape unscathed the search-light of pharmaceutical criticism.

W. G. S.

May, 1905.

PREFACE TO THE FIRST EDITION.

SOME apology may seem to be needed for the introduction of another book on dispensing, when several exist already. But useful to the chemist as these works undoubtedly are, they are of very little assistance to the dispensing medical practitioner, and, indeed, are very seldom to be found in his library. Much of their space is taken up with such subjects as pill-rolling, pill-coating, the making of emulsions, capsules, etc., subjects in which he is interested not at all; and but very few hints can be gathered for what he is really concerned about, namely, how to make his dispensing as easy as possible.

The present volume is introduced with the object of filling this want, and I have only to express the hope that my efforts may afford some useful help to my brethren in a branch which the majority regard as the most wearisome of their professional duties, and one in which the training of the medical student is admittedly most sadly deficient.

W. G. S.

January, 1904.

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ABBREVIATIONS.

- B.M.J. —British Medical Journal.
B.P. —British Pharmacopœia.
B.P.C. —British Pharmaceutical Conference.
B.S.H. —British Skin Hospital Pharmacopœia.
B.G. —Bristol General Hospital Pharmacopœia.
C.T.H. —Central Throat and Ear Hospital Pharmacopœia.
C. and D. —Chemist and Druggist.
G.N. —Great Northern Hospital, Holloway.
G.H. —Guy's Hospital Pharmacopœia.
L.R.I. —Lancaster Royal Infirmary Pharmacopœia.
L.H. —London Hospital Pharmacopœia.
Off. —In the B.P.
P.F. —Pharmaceutical Formulas (MacEwan).
Q.J.H. —Queen's Jubilee Hospital Pharmacopœia.
U.C.H. —University College Hospital Pharmacopœia.
U.S.P. —United States Pharmacopœia.
R.S.H.I. —Royal South Hants Infirmary Pharmacopœia

DISPENSING MADE EASY.

INTRODUCTION.

THIS volume has been compiled for the use of the medical practitioner who dispenses his own medicines, after careful examination of the methods in use in nearly a hundred "surgeries" in all parts of England and Wales. As a rule the practitioner in the country village and country town was found to do the most accurate and scientific dispensing, every ingredient being invariably weighed or measured. In club practices, on the other hand, haphazard dispensing was found the rule rather than the exception, and in a few places—incredible as it may seem—the scales and the measure-glass were only conspicuous by their absence; everything was rapidly and roughly guessed, and consequently compounding was most inaccurate and of the crudest description.

Dispensing in a medical practice of any dimensions cannot possibly be done quickly in the ordinary way practised in the chemist's shop. It is only by the adoption of systematic methods, by the use of concentrated solutions of solid salts, and other time-saving devices and wrinkles, that anything approaching accuracy combined with rapidity can be attained. Such expedients are not as a rule to be found in any existing publications. Occasionally a stray hint can be got from the medical and drug journals, but generally they are handed on from one practitioner to another. Many of the leading manu-

facturing chemists have introduced time- and money-saving specialties for medical practice, and these firms I desire to thank for their courtesy in sending me copies of their trade catalogues, from which I have derived many valuable hints.

None of the existing books on dispensing take into consideration the special needs of the medical man with a large dispensing practice. Dispensing in the large club, colliery, or works practice is quite a different matter from that in the small private practice or chemist's shop. In the latter abundant time can be taken for compounding, and all operations be gone about in a leisurely manner. In the busy club-practice, on the other hand, a considerable number of patients have to be examined, prescribed for, and have their medicines dispensed in a limited time. Rapid dispensing is essential in such a practice, and if through faulty methods, or more often from want of any systematic method at all, it is not done quickly enough, the work is apt to degenerate, guessing takes the place of the balance and the measure-glass, and the best interests of the patients suffer. My object is to show how dispensing can best be accomplished, so as to lighten this irksome and tedious branch of the general practitioner's duties, and at the same time secure simplicity, accuracy, and economy, without sacrificing therapeutical efficiency. The terms "dispensing" and "compounding" are in this volume regarded as synonymous, although not strictly so.

The use of medicines other than those of the official B.P. is so common and universal with the medical practitioner, either on the score of convenience, of superiority, or economy, that no apology is required for introducing them here. Such B.P. preparations in common use as can be made by simple mixture, are brought together in this volume so as to be readily accessible. It is becoming more and more the custom for the up-to-

date dispensing practitioner to use concentrated tinctures, fluid extracts, or liquors. They offer advantages in the way of superior stability, uniform therapeutic results, economy, and extreme handiness in dispensing, over the unstable, unstandardized B.P. tinctures.

Many practitioners working large practices prepare a pharmacopœia of their own, but it rarely goes beyond a few stock mixtures and solutions. The formulæ here given for concentrated mixtures are suggestive only ; they are intended merely as sign-posts, to show the practitioner how he may design similar mixtures to his own formulæ. The easy method given of quickly calculating the ingredients necessary to make any desired quantity of concentrated mixture, will be found generally useful. The mixtures may either be made in his own dispensary or by his wholesale chemist. Any slavish adherence to fixed formulæ is strongly to be deprecated, and I trust that the special method followed with regard to concentrated mixtures will prevent the practitioner from falling into this habit. Hundreds of other formulæ might have been enumerated, but this would serve no useful purpose, and would rather tend to confuse. Indeed, the difficulty has been to keep the book within a convenient compass.

Economy, as well as rapidity in dispensing, is necessary in club and parish practice. The leading hospitals, with drug-bills of many hundreds of pounds per annum, adopt economical substitutes for many official galenical preparations, the strength of active ingredients remaining the same as in the B.P., although the menstruum is a less expensive one. Even such a wealthy institution as St. Bartholomew's Hospital uses cheap substitutes for such drugs as Spts. Ammon. Co., Vin. Ipecac., Dec. Aloes, etc., and from a medicinal point of view these are equal in every respect to the B.P. preparations.

Throughout, I have steadily kept in view the

special needs of medical practitioners in large club or works practice, the following paragraph, from the preface to Guy's Hospital Pharmacopœia, exactly meeting the situation: "Preference has been given to simple rather than complex formulæ, and to the cheaper rather than to the dearer drugs and preparations, in cases where both seemed to be of equal therapeutic value."

Most of the preparations described in these pages, whether official or otherwise, are such as can readily be made by simple admixture, requiring merely the measure and the weighing-machine, with but little knowledge of pharmacy. They are made to conform to B.P. strength as regards the active ingredient, but the menstruum is, whenever possible, non-alcoholic; glycerin, which is cheap, being substituted for spirit, which is expensive. Where a dispenser is kept (and many medical men with large club-practices employ a dispenser with the "minor" qualification) the greater number of the formulæ here given can be manufactured on the premises with the ordinary apparatus to be found in every dispensary, at a great saving in cost compared with the druggist's price. Take Liq. hydrarg. perchlor. for instance. The chemist's price will be nearly a shilling per pound, whereas the same quantity can be quickly made for less than a penny, with as little trouble as it takes to dispense an 8-ounce mixture.

As the best formulæ may be difficult to choose, I have attempted to give them relative values by means of asterisks, either as time-saving or money-saving preparations, from the ease with which they can be manufactured, or from the frequency with which they are in use. Those marked *** I regard as of greatest value, those with ** in a lesser degree, and so on.

The sources of the formulæ are stated where possible; in the case of those obtained from private

practitioners it was obviously impracticable to do this. In particular I have to acknowledge my indebtedness to the *Pharmacopæias of the London Hospitals* and the *Extra Pharmacopæia* of Martindale and Westcott ; to Professor Sir William Whittle's *Pharmacy and Therapeutics* ; and MacEwan's *Pharmaceutical Formulas and Art of Dispensing*.

PRACTICAL HINTS ON DISPENSING.

THE DISPENSING ROOM.

It is too commonly the custom amongst medical men to imagine that any room fitted up with shelving will make a dispensary. Work can be done much more quickly, much more easily, and with greater comfort in a room specially fitted up with regard to the special requirements of the practice. Make-shift fittings lead to confusion and disorder, and no special devices in the way of shelves, caddies, label or paper cabinets, will render such a dispensary suitable for doing the quickest work.

The **Dispensing Room** should not be too large ; one in which a step or two to the right or left enables one to reach any required bottle, is the most suitable for rapid work. A large room, where one has to wander all over the place in search of something, is quite unsuitable. The shelving should be arranged in an angle, and if the room serves also as a consulting-room, it should be shut off by a partition. This partition may be about six feet high, and covered with paper similar to that on the walls of the room.

With very large numbers of patients to deal with, three rooms will generally be found necessary—a waiting-room, a consulting-room, and one in which to dispense, all communicating one with the other. It is common to have the doors fitted with self-closing springs. The less drapery, curtains, carpets, etc., there is about a surgery frequented by large numbers of patients, the better, so that

infection may not be spread. Linoleum is better than carpets for the floor, as it can readily be washed with disinfectant solution, and does not absorb blood and other septic matter. Chairs are best of plain wood, and bench-seats of pitch-pine varnished. The walls of the waiting-room may with advantage be covered with varnished wood to a height of five feet or so. It is clean, looks well, and is easily washed with disinfectant solution. The consulting-room is usually fitted with a desk and revolving chair. These are best placed so that the light falls full on the patient's face, whilst that of the medical man is in shadow.

The **Dispensing Counter** should not be too high, and, if not made of hard wood, should be covered with white American oil-cloth. This forms a clean smooth surface, from which anything spilt can be easily wiped. Drawers should be fitted below for chip-boxes, pill-boxes, plaster, dressings, and the commoner salts, such as Magnesia, Epsom salts, Sod. Bic., Pot. Nit., Pot. Bic., etc. The drawer for corks should have three partitions, and that for labels should not be too deep.

Shelves for bottles should never be much wider than the bottles that are intended to stand on them. Deep shelves invariably mean double rows of bottles, half of which cannot be seen, and are in time altogether forgotten. A sliding-door like those in railway booking-offices is a great convenience in a place where many medicine bottles go out each day, as the bottles can be handed through it to the patients with little trouble.

The **Sink** should be lead-lined or of glazed earthenware, and placed in the corner. Both hot and cold water should be laid on if possible, and it should be fitted with a waste pipe. A patent **Folding Lavatory**, such as those to be found in steamer cabins, is a great convenience in a consulting-room. A constant **Water Supply** from the main much facilitates rapid work, as bottles can be filled much more quickly from it than from a jug. The tap should be provided with a tapering nozzle, so as to fit the necks of all sizes of bottles from 1 oz. upwards. Failing this, a 3-gallon stoneware jar with wood tap answers

well, and a similar jar may be used to hold Inf. Gent. or whatever infusion is used in largest quantities.

Light.—The incandescent light with bye-pass is a favourite means of lighting surgeries, as it can be turned on and off in a moment. The gas-jet should be placed in such a position that it is easy to distinguish the names on the bottles, and so that the counter is well lighted.

STOCK AND FITTINGS.

Small-sized **Stock Bottles** are a nuisance, as they require re-filling frequently. Have the preparations that are most frequently in use directly in front of you, so as to be within easy reach. Never mix up "wet" and "dry" preparations, and endeavour to have a place for everything and everything in its place. Some adopt an alphabetical arrangement of their drugs—tinctures all together, liquors all together, etc.—and this is very convenient, as a stranger, even in a few minutes, obtains the key of the whole arrangement, and is enabled to find any required bottle quickly. Concentrated mixtures and solutions of solid salts should be placed within easy reach.

There is no advantage in keeping *all* poisons together in a cupboard, as the possibility of mistaking one for the other is greater than if they are dotted here and there over the shelves.

In fitting up a dispensary, syrup bottles of dark-blue glass fitted with **Plug Stoppers** instead of the usual form of stopper should be included. India-rubber corks are very useful; they prevent evaporation perfectly, and never stick like glass stoppers. Contrary to what is usually supposed, experiments have shown that from a bottle provided with a well-fitting cork 1 per cent of chloroform evaporated, whereas with the best ground glass stoppers 3 per cent evaporated in the same time.

In making up solutions and stock mixtures, the quickest way to get a salt into the bottle is to place it in a funnel fixed in the mouth of the bottle, then pour the water, etc., over it, when it can be quickly run off into the bottle, a wire or stirring-rod materially

assisting the process. After you have ascertained by weighing and measuring the exact height a given quantity will reach in your stock-bottles, scratch a mark with a file on the glass. All you then have to do on subsequent occasions is simply to weigh and measure the ingredients, and fill up to the scratch on the bottle.

Concentrated Mixtures are convenient both for the prescriber and the dispenser. They enable one to keep prepared ready for use many of the medicines in constant demand; they economize both time and materials; secure rapidity in dispensing, uniformity in appearance, and accuracy in dosage. By simplifying compounding, they diminish the risks of making mistakes; and by saving time, they enable the practitioner to devote more attention to the physical examination of the patients than he might otherwise be able to do. The habit of guessing instead of weighing is but too common amongst busy medical men, and repeated experiments have shown that one is more apt to over-estimate than under-estimate the amount. But by adopting the plan of concentrated solutions, together with a few well-selected stock mixtures, accuracy will be ensured, simplicity, economy, and a great saving of time and labour. When once he has got accustomed to them, the practitioner will find that the labour required to keep them up to the mark is scarcely noticed, a spare half-hour now and again sufficing. It is almost as easy to make up a gallon of concentrated mixture as it is to dispense an 8-oz. bottle; the operations to be gone through are the same in both cases.

When the mixtures contain no solid deposit, they may be kept in a glass or earthenware jar fitted with a wood tap. Winchester quarts provided with a small wood tap, and tube to act as an air-inlet, make excellent stock bottles for both concentrated mixtures and solutions. They are laid on their sides on a curved wood support, and, if placed a little on the slant, all dust and impurities collect in the hollow of the shoulder.

Solutions should invariably be filtered before use. In the process of grinding and their subsequent

storage, it is surprising what an amount of dust and *débris* the commoner salts accumulate, all of which remains behind on the filter paper. Nitrate and bicarbonate of potash, and Epsom salts, are among the worst offenders in this respect. Solutions undoubtedly give a brighter and more elegant mixture than do the solid salts, and, considering the amount of dirt present in most samples of the more commonly used salts, it behoves the practitioner, on the score of cleanliness alone, to use filtered solutions only. They are generally made with tap water or boiled water, but if kept long some of them are apt to develop fungoid growths. As a rule the more concentrated the solution the better it keeps. Ferri et ammon. cit. and Ferri et quin. cit. keep without oxidation if made up with chloroform water. Thirty minims of chloroform to 40 oz. of solution will keep solutions bright and free from fungoid growths for a long time.

There is no true economy in buying cheap **Corks**. As the quality varies so does the price, and of the lower-priced varieties many are unfit for use, and break in fitting them to the bottle. Have at least three different compartments in your cork-drawer or box : One, the largest, for 3, 4, 6, and 8 oz. ; another for 3 oz., 2 oz., 1½ oz., and 1 oz. ; the third for vial corks, ½ oz., 2 dr., and 1 dr. Another compartment might be reserved for old corks for "club" bottles. By this method the required cork can instantly be found when wanted, without having to try two or three before the right one is got ; there is no bother, no trouble, and you save both your time and temper.

Cork Pressers are very convenient, although but little used in the medical man's dispensary. Many will tell you that they have not time to use one, but on enquiry you find that the time is really wasted in having to hunt for the required cork in a drawer where all sorts and sizes are mixed up in inextricable confusion. The wheel form of cork-presser is probably the best kind, as it is not so liable to break the cork. In using the ordinary or lever form, take care to press the whole length of the cork, otherwise it may happen to crack. Cracked, badly-fitting,

or dirty corks impress the patient most unfavourably.

Bottles are best obtained direct from the glass manufacturer. None of the wholesale drug firms make them, and by dealing direct with the factory you save their profit, can be certain of getting a good article at the market price, and, as there is one journey the less, the breakage is reduced to a minimum. They are packed in crates of 5 gross of one size, or assorted sizes. As the domestic table-spoon and teaspoon varies in its capacity within wide limits, it is always desirable to use graduated bottles. For an additional shilling per gross they can be had ready washed, and sealed with thin paper round the necks to exclude dust.

Funnels.—These may be had of glass, vulcanite, composition, or enamelled metal. The latter are best for rough usage, as they are unbreakable, and unaffected by corrosive liquids. In filtering, it is a good plan to place a loose plug of tow in the funnel, as then there is less liability of the filter paper breaking.

Spatulas, of steel for powders, and of bone or vulcanite for ointments, are necessary. By tacking a strip of leather, with divisions or loops wide enough to take them, to the side of the dispensing counter, the spatulas may be kept tidy, in one place, and ready to hand when wanted.

Apparatus for the Dispensary.

Cork-presser	Ointment slab
Funnels	Paper, filtering
Infusion jug	Powder-folder
Label damper	Scales with dr. and gr. weights
Measure glasses	Steel and bone spatulas
conic., 2 dr. 2, 4 oz.	Stirring rods, glass or vulcanite
cylind., 1 dr., pint	Weighing machine
Mortar and Pestle,	to weigh ozs. and lbs.
12 oz. compo.	Set of oz. and lbs. weights.

LABELLING STOCK BOTTLES.

Books of the labels most commonly in use can be obtained from some of the wholesale druggists. After gumming to the bottle, the label should be

smoothed down by laying a piece of paper over it and then pressing it uniformly down. When dry it may be sized with mucilage, and afterwards, when dry, covered with several coatings of shellac varnish, waterglass solution, or celloidin. Special attention should be given to the edges, and for an eighth of an inch of the glass beyond.

For **Corrosive Liquids** paper labels are useless, and the usual etched or sandblast labels are not satisfactory, as it is difficult to read them at a glance. Bottles with burnt-in labels, or labels faced with glass, are better, but expensive. White or black enamel lettering can be painted on the glass with a brush, but is not permanent, and it is troublesome to do. Recently, paper labels faced with thin celluloid have been introduced under the name of "glasscine."

Indestructible Labels.—For making these, the following plan will be found reliable : "Cut waste roll celluloid films into the required sizes, having previously cleaned them from the photographic film. The celluloid film is to be stuck down on the paper label and then securely cemented down on the glass. Diamond cement is the best ; it is quite impervious to heat and damp. It is made thus : Dissolve 1 oz. of soft gelatine in 3 oz. water, and add $1\frac{1}{2}$ oz. S.V.R. and 40 grs. gum ammoniacum triturated in $\frac{1}{2}$ oz. water ; add 36 grs. of mastic dissolved in $\frac{3}{4}$ oz. of strong alcohol, and the cement is made. For use, place bottle in hot water. Practically nothing will destroy a label made in this way, by first cementing label to celluloid and latter to glass bottle."—*Journal of Photography*.

HINTS ON DISPENSING.

In **Measuring Liquids**, have the label of the stock bottle uppermost, never downwards, otherwise the drop of moisture left on the lip will trickle down and in time destroy the lettering. It is a good plan to catch this drop on the stopper before it is replaced in the bottle. The measure glass should be grasped between the thumb and the next two fingers of the

left hand, and held on a level with the dispenser's eye so that the light shines through. Minimum measures may be grasped by the foot between the finger and thumb. The stopper should invariably be held, when taken out of the bottle, between the middle finger and the forefinger of the right hand, or grasped by the little finger of the left hand.

In making **Mixtures** the dispenser should not mix all the active ingredients and then add the water or other aqueous vehicle, or else in many cases chemical decomposition and alteration of the ingredients will occur. Partially fill the bottle with the aqueous vehicle, add most of the ingredients, then more water, and finally the most potent liquid ingredients.

If there be any very poisonous substance, like Prussic acid, Strychnine, Aconite, Arsenic, Corrosive Sublimate, etc., ordered in a mixture, it should be *put in last of all* before corking, unless there be some reason for the contrary. The force of this is obvious. If this be the dispenser's habit or rule, the possibility of his putting it in twice is out of the question; and often, when the attention is unavoidably arrested, the most careful dispenser may forget what he has just accomplished.

All mixtures should be briskly shaken before the label is put on, to ensure thorough admixture. This shaking often causes a troublesome **Froth** in some mixtures containing such infusions as senega, etc., and so delays filling and corking the bottle at once. In such a case the best plan is to add a few drops of spirit, when the froth will quickly vanish without any loss of the contents. If any foreign particles should be observed in a mixture, it should be strained through a piece of absorbent cotton wool packed lightly in a funnel.

In the case of **Infants** and **Young Children** one is apt, unconsciously, to select a dispensing bottle that gives them twice or three times the number of doses that an adult would get. It is a good plan to construct a table for different ages, so that every patient, great or small, is given a uniform number of doses. The following table is constructed so that all patients, adults and infants alike, get 8 doses :—

AGE.	BOTTLE.	DOSE.	DOSES IN BOTTLE.
16 and above	8 oz.	oz. 1 q. 3 ^{tis.}	hor. 8
12 to 16 yrs.	4 oz.	oz. $\frac{1}{2}$ q. 3 ^{tis.}	hor. 8
2 to 12 yrs.	3 oz.	dr. 3 q. 3 ^{tis.}	hor. 8
3 to 24 months	2 oz.	dr. 2 q. 3 ^{tis.}	hor. 8
up to 3 months	1 oz.	dr. 1 q. 3 ^{tis.}	hor. 8

QUICKLY DISPENSING VISCOUS FLUIDS.

Thick liquids like glycerin are extremely troublesome to dispense. They clog up the measure-glass, and if, as is frequently the case, the quantity is ascertained approximately by judging from the graduations on the dispensing bottle, they stick in the neck and overflow the sides, making a nasty, sticky mess on the counter. **Glycerin** mixed with an equal bulk of water has not this objection. It keeps perfectly, pours readily, and is the best way to use glycerin when employed for the purpose of sweetening mixtures. The glycerin of tannin and alum, when used for making gargles, can be kept mixed in the same way. Similarly, oxymel scillæ and some other viscous fluids can be made to pour more readily by mixing them with an equal bulk of chloroform water. They are thus more easily handled for dispensing purposes. Of course, the dose is then double that of the original preparation. Elixir of saccharine, however, is more easily handled than syrup or treacle. It is best to place bottles containing chlorodyne, glycerin, and other fluids of similar sticky nature, upon a sheet of glass, so as not to mess the wood shelves.

Oils, thick liniments, and emulsions are most easily and quickly dispensed in wide-mouth bottles. Turpentine liniment, B.P., is troublesome to dispense, and wastes a great deal of time on account of its thick consistence. Under the heading of Linimentum Album will be found several recipes for embrocations which are not so viscid, and therefore better adapted for rapid dispensing.

DISPENSING OF OINTMENTS.

Ointments are extremely troublesome and messy things to dispense. It is not usual, in the medical

man's dispensary, to keep them in special shop-jars, as that would involve their transference from the original container in which they are sent out by the wholesale druggist. Some firms use earthenware pots with loose-fitting lids, others merely a paper covering. In both cases the covers often get misplaced or lost, and when the ointment is wanted it is found coverless and with a thick coating of dust. From exposure to the atmosphere, too, it may be found that some volatile ingredient, as oil of rose or eucalyptus, has almost totally disappeared.

Square Tin Boxes, enamelled inside and out, and provided with tightly-closing, hinged lids, are so cheap nowadays that there is nothing to prevent the wholesale druggist sending out most ointments in them, with a separate bone or vulcanite spatula attached to the lid by a string. In the pharmacy of St. Thomas's Hospital separate wood bins are used, each ointment being provided with its own spatula. Square tins offer the following advantages: (1) They are easy to dispense from; (2) No loose cover to displace or get lost; (3) Freedom from dust; (4) Cheapness; (5) Ornamental appearance; (6) Cleanliness; (7) Less weight than stoneware; (8) More air-tight, hence ointments keep longer; (9) A spatula reserved for each ointment; (10) Square tins pack more easily than round stoneware jars, and there is no waste. Tins cannot however be employed for ointments containing free acid, or those easily reducible, such as citrine ointment.

Collapsible Tubes have been much used for ointments of late years. They are handy to dispense, keep the ointment from dust, and prevent waste, but they are rather more expensive for club practice than ointments bought in bulk. It is for eye-ointments that the medical man in working-class practice mostly uses them, also in midwifery.

DISGUIISING WELL-KNOWN MEDICINES.

In club and working-class practice many common but valuable medicines require to have their identity destroyed, otherwise the patient promptly diagnoses them as "nothing but chemical food" or "zinc

salve," and loses faith in his medical adviser. Parrish's syrup can be obtained colourless from most of the wholesale houses ; it can also be got coloured yellow. But a little Sacch. ust. added to the ordinary preparation will effectually destroy its identity to prying eyes. Ungt. zinci oxid. can be disguised by means of Liq. cocci or Liq. rosæ, and a few drops of Oil of eucalyptus, geranium, or gaultheria will impart, in the patient's estimation, a distinctive virtue to the ointment, which before the addition it did not possess.

Again, in agricultural districts scabies is fairly common amongst farmers and other fairly well-to-do people, and although we may pronounce it "eczema" or "scurvy," yet the patient, on being given a box of sulphur ointment in its native or B.P. state, often asks if we think it itch ; or more commonly becomes offended, and does not come again. Here, again, a little Liq. cocci or Liq. rosæ is sufficient to conceal its identity. Other instances will occur to the practitioner where it is necessary to disguise familiar domestic remedies.

Tinct. iodi decol., B.P.C., may take the place of ordinary iodine for painting joints and glandular swellings. For cervical swellings, however, Tinct. iodi. applied at night is best, and the stain is removed by sponging with Liq. ammon. in the morning. A little willow-wood charcoal or burnt cork, with a few drops oil of geranium, effectually disguises Ungt. or Pulv. iodoformi.

REMOVAL OF FIXED STOPPERS.

There is nothing more annoying when one is in a hurry than to find a bottle into which the stopper is firmly stuck. One of the following methods will generally succeed in loosening it :—

(1). Fix it between the door and the door-post and gently twist.

(2). Strike the stopper several sharp blows in an upward direction with a piece of wood or the handle of a spatula.

(3). Dip the neck of the bottle into hot water.

or, better still, wrap the corner of a towel round it, making a cavity, into which pour hot water.

(4). Heat neck of bottle in a spirit-lamp.

(5). Use a small hand-vice, the jaws of which are padded with several layers of paper.

(6). Use the rectangular block of hard wood sold under the name of a "stopper-remover." It is provided with different-sized holes to take the heads of different-sized stoppers. It is well to guard the hand and fingers from the possible chances of breakage by wrapping a towel round them.

To remove broken Corks from Inside Bottles.

This is easily accomplished by inverting the bottle so that the broken cork lies directly over its neck. Then with a piece of stiff string or wire in the form of a loop endeavour to noose the cork, after having accomplished which it can be easily withdrawn. This is simpler and better than the bifurcated arrangement with sliding ring sold by the druggist's sundrymen.

WRAPPERING AND LABELLING.

As far as possible stock **Printed Labels** in such variety that you have as little writing as possible to do. Printed labels look neater and save considerable time. In the chemist's shop the edges are usually trimmed with scissors to add to the neatness of the appearance. It is a slovenly practice to stick a new label over an old one, and this should on no account be done; take a clean bottle for each repetition of a patient's medicine. Labels for ointments, pills, and tablets should be provided, as the surface of boxes is unsuitable for writing upon. Bronzed tin boxes can now be obtained from the druggist's sundrymen for pills and ointments; they are grease-proof, and are neater than wooden boxes or willow chips. A **Label Damper** is a great convenience; the best type is one made entirely of glass, consisting of a glass roller in a reservoir of water. Those with felt and wood rollers are apt to smell after a time from

decomposition of the gum. In some places where large numbers of pills and ointments are used, it is the custom to put up a dozen or so at a time of the most common, and to keep them ready boxed and labelled in a drawer or box.

The medical practitioner as a rule is not so particular as he ought to be in these matters. Many who can sternly resist the allurements of the low-priced drug firm, will yet send out medicines procured from a house of high reputation for quality and price, in bottles full of air-holes, with corks that break, labels with illegible writing (when the same label might have been obtained ready printed at 1s. 8d. the thousand), and paper so flimsy and inferior in quality that it is impossible to write neatly upon it.

Wrapping Papers are best obtained machine-cut into the requisite sizes all ready for use. Machine-cut powder papers can also be obtained. It is usual to place wrapping papers flat in a drawer, or in one of the wood racks for holding paper and envelopes, which can be obtained at any stationer's. The best way, however, for quick work is to string together a quantity of cut papers at one corner, as the grocer does his packing paper. These can be hung on a nail or the knob of a drawer within easy reach of the dispensing counter, and when required for use a sheet can be easily and rapidly torn off.

Pills or other enclosures wrapped in the same package as a bottle are apt to be thrown into the fire along with the wrapping paper; hence it is a good plan to write on the outside "Pills enclosed," so that such a mishap may not occur. This is better than sticking the box to the cork with sealing-wax, as some do.

For **Sealing Packages** a gas-jet kept always alight, such as the dispensing chemist uses, is a great convenience. In country places where there is no gas a spirit-lamp is often used, but the use of the larger-sized wax-vestas, kept in a tin box, and when lighted placed slightly projecting over its edge, is a plan that answers admirably.

REGISTRATION OF PRESCRIPTIONS.

The folio number in the day-book or prescription-book, or the date, may be marked on the label. Another method is by using symbols—O. for tinct. opii. Fe. for liq. ferri, and so on. Stock mixtures are best distinguished by labelling them A, B, C. etc. It saves a good deal of writing. A third way is to stick numbers on all the bottles on your shelves in rotation; these numbers written on the label represent the different ingredients. Pills and ointments also may be numbered. It is a good plan to adopt a distinctive shape and colour for your special pills—white, pink, red, yellow—as by this means you can tell exactly what pill a patient may inquire for without any reference to your books. This plan of numbering saves a good deal of writing in the day-book.

TO DISTINGUISH PRIVATE, PARISH, AND CLUB BOTTLES.

Two table-spoonfuls to be taken
every four hours.

A Mr. John Jones.

Messages for country visits should be sent to the Surgery before 10 a.m.
At home for consultation 9 to 10 a.m. ; 3 to 4 p.m. & 6 to 7 p.m.

Two table-spoonfuls to be taken
every four hours.

Miss Smith.

A

Messages for country visits should be sent to the Surgery before 10 a.m.
At home for consultation 9 to 10 a.m. ; 3 to 4 p.m. & 6 to 7 p.m.

One table-spoonful to be taken
three times a day.

A

John Brown.

Messages for country visits should be sent to the Surgery before 10 a.m.
At home for consultation 9 to 10 a.m. ; 3 to 4 p.m. & 6 to 7 p.m.

(1). **Club.**—The prescription number or abbreviation is placed to the left hand side of the name as in the first example : This shows at a glance that Mr. John Jones is a club patient, and that his medicine is *mist. alba*.

(2). **Private.**—The prescription number or abbreviation is placed to the right hand of the name.

(3). **Parish.**—No prefix is used to the name, the prescription number or abbreviation being placed to the left as with club patients.

HOW TO CUT DOWN THE DRUG-BILL WITHOUT LOSS OF THERAPEUTIC EFFICIENCY.

If the drug-bill for twelve months of an average general practice be dissected, the quantity and cost of crude drug, root, leaf, gum, bark, or whatever it may be, in each spirituous preparation, calculated out, and the quantity and cost of alcoholic menstruum similarly, it will be found that *the cost of spirit itself is very nearly 50 per cent. of the whole amount*. In other words, in every drug-bill, having an average number of tinctures, etc., as items, nearly one-half goes as the price of the spirit employed as solvent for the crude material. This may come as a startling fact to some, but it is nevertheless true, as any one can prove for himself.

It seems somewhat sordid to go into the question of the cost of drugs at all when it is a person's health, and perhaps life, that is at stake, but in these days of cheap club practice this aspect of medical life must be considered. The wholesale chemists who

specially cater for the medical man have recognized it, and hence many of them manufacture aqueous tinctures and other inexpensive substitutes for B.P. galenicals, which, although economical in use, are yet quite as efficient medicines as the official preparations.

In order to cut down the drug-bill without any sacrifice in therapeutical efficiency some general rules suggest themselves :—

(1). As far as possible never use a spirituous preparation when another will answer just as well. Use aqueous tinctures or, better still, fluid extracts, as a good many drugs cannot be made as aqueous tinctures. Whatever spirit preparations you use, have them as concentrated as possible. The extra alcohol adds nothing to the efficiency of the medicine.

(2). Remember in prescribing, that flavouring agents, aromatic concentrated waters, spirits, syrups and aromatic tinctures, as ginger, cardamoms, etc., are largely spirituous. The most economical flavouring agents for club patients' medicines are cassia and peppermint waters, and for sweetening, golden syrup and chloroform water.

(3). Never use a tincture when a liquor or other aqueous preparation will answer just as well. For instance, *Liq. strych.* is cheaper than *Tincture of nux vomica*, and when, as is usual, it is given in about an ounce of aqueous vehicle, there is little or no danger of precipitation.

(4). In considering the relative costs of different drugs, the price per lb. quoted in the wholesale druggist's list must be considered along with the respective dosages. Thus 1 lb. of *Liq. strych.*, costing 2s., the dose of which is 2 to 8 mins., will go as far as 2 lbs. of *Tincture of nux vomica* at 3s. 4d. per lb., the dose of the latter being 5 to 15 mins. The relative cost is therefore as 2 : 6 ; or expressed differently and considered therapeutically, *Liq. strych.* goes three times as far as *Tincture of nux vomica*. Again, *Liq. strych.* is absolutely uniform in its composition, while *Tincture of nux vomica* is standardized for strychnine alone, and no allowance is made for the varying proportion of brucine. Estimated in this way, fluid extracts average about 1s. per lb.

as compared with B.P. tinctures of corresponding drug content.

(5). Where a dispenser is employed, a large number of the preparations for which formulæ are given in this book can be manufactured at a fraction of the druggist's price. Most require merely a balance or weighing machine, and measures. Even if a few of the more commonly used are prepared, it will effect a considerable saving.

(6). Avoid a multiplicity of drugs, or of preparations of the same drug; you are thus enabled to buy in larger quantities, and consequently at a cheaper rate, the preparations you do use.

Martindale's analyses of 25,000 prescriptions will show the order of frequency in which different medicines are used; and the practitioner who wishes to do economical dispensing should first direct his attention to them.

B.P. Preparation.	Substitute.
1st. Tinct. Nucis. Vom.	Liq. extract or Aqueous tinct.
2nd. Spt. Chlorof.	Aq. Chlor. Conc (Emulsion)
7th. Spt. Ammon. Aromat.	Liq. Ammon. Co.
8th. Vin. Ipecac.	Elixir Acetum or liquid ext.
10th. Spt. Eth. Nit.	Conc. Liq. 1 to 8, or 1 to 4
20th. Tinct. Camph. Co.	Conc. 1 to 8

To illustrate the economy that can be effected, take Spts. Chlorof.

		£	s.	d.
Spts. Chlor. B.P.	16 fl. oz. Chloroform costing		3	9
	304 fl. oz. 90% alcohol costing	2	5	0
		<hr/>		
		Total	£2	8 9
Aq. Chlor. Conc. 1-10	16 fl. oz. Chloroform	} costing	6	3
	8 oz. fl. ext. of Quillaia			
	8 oz. water			
		<hr/>		
Saving on 2 gallons		£2	2	6

POINTS WORTH REMEMBERING.

Liq. ferri perchlor. with digitalis or cinchona forms a black, inky-looking mixture. A small quantity of dilute phosphoric acid will make it clear.

Liq. ammon. acet. in small quantity will render it possible to dispense a perfectly clear aqueous mixture of ammoniated tincture of quinine, instead of the thick, muddy mess usually seen.

Salicylic acid is very insoluble in water. Liq. ammon. acet. dissolves it and yields a clear mixture.

In dispensing mixtures containing salicylate of soda, be sure the measure-glass is perfectly clean, as the slightest trace of an iron salt will result in a violet-blue appearance, and make the patient think that it is "not the same medicine," on account of the alteration in colour.

Mixtures of salicylate of soda and carbonate of ammonia, or Spt. ammon. aromat., turn brown in the course of a day or two.

Sod. bicarb. and alkalies change the red colour of Tinct. card. co. and Tinct. cocci. to dark purple.

Antipyrine and Spt. ether nit. cause a greenish colour from chemical decomposition.

The slightest trace of Liq. ferri perchlor. in the measure-glass causes discoloration with Liq. ammon. acet.

Quinine in acid solution, if mixed with salicylate of soda or salicylic acid, forms a semi-solid mass in the bottle.

Subnitrate of bismuth in mixture with bicarbonate of sodium generates carbon dioxide, in sufficient quantity sometimes to burst the bottle.

Bromides and iodides decompose with strong acids, and bromine or iodine is set free. Spt. eth. nit. sometimes acts in this way, but not if previously neutralized with an alkali. Bromides and iodides should not be dispensed with alkaloids, as the latter precipitate.

Never add mucilage to strong tinctures without first diluting largely with an aqueous vehicle; otherwise a stringy mess will be the result.

Liquid extract of cascara sagrada precipitates with water, but if a little Liq. ammon. be first mixed with the water no turbidity results.

In compounding draughts of male fern, shake the bottle containing the liquid extract first, pour out the dose into a dry measure previously warmed with hot water, rub down with mucilage or powdered

acacia, and dilute with water. Large capsules, however, will save all the trouble.

Senega and quillaia emulsify oils, and a few drops of the tincture are sometimes used for quickly preparing an emulsion, such as copaiba, etc.

It is easier and quicker to measure a fluid than to weigh a solid ; hence the more solids you keep in solution, the greater the ease and rapidity with which your dispensing will be done.

Benzine will remove chrysophanic acid stains ; cyanide of potassium silver nitrate stains ; while a solution of sod. hypophos., 1 dr. to an ounce of water, causes iodine stains to vanish, and has not the irritating effects of ammonia and potash.

Certificates take up a large amount of time during the club doctor's dispensing hours. A rubber dating stamp and fac-simile rubber stamp of the surgeon's signature, together with a good fountain pen, will save an enormous amount of time. Black aniline ink may be used.

Printed sheets for handing to patients, such as directions for applying an evaporating lotion, dietary for infants, and dyspepsia diet-sheets, will save much time in giving verbal explanations.

In the case of nervous patients, a label " For external use only " is better than a " Poison " one. **Poisons** for outward application should invariably be dispensed in fluted blue-glass bottles.

In the case of mixtures containing potent remedies, it is the custom in club practice to direct the patient to be sure to go by the graduations on the bottle, and not by domestic spoons. Even when this is done it is common to find that a mixture intended to last four days has been finished in two.

INCE'S DISPENSING APHORISMS.

Read through a prescription rapidly, and in a manner suggesting no suspicion of doubt.

Write directions invariably before dispensing ; avoid thus the use of blotting paper ; a good dispenser uses almost none.

If a mixture contains readily soluble ingredients, never use a mortar.

Avoid effecting solutions by heat, for fear of re-crystallization.

With syrups, and also other ingredients not water, arrange in dispensing to rinse out the measure and leave it clean. A skilled dispenser shows very little traces of his work.

Carefully clean and put away weights and scales after each operation.

Select glass pans for scales, and discard flimsy brass material, which corrodes speedily and becomes inaccurate.

Learn to judge of the quantity to be weighed with tolerable accuracy.

Slow dispensing is bad dispensing, and arises either from deficient practice or want of knowledge.

To these rules may be added :—

(1). Have a place for everything and everything in its place.

(2). For all potent preparations use a separate minim glass, and, if possible, measure these last.

FORMULÆ.

ACETA—Vinegars.

Acet. Ipecac.

Liquid extract of Ipecac. B.P.	-	1 oz.
Dilute Acetic acid	- -	17 oz.
Alcohol 90%	- - -	2 oz.

Incompatible with alkalies, hence Elixir Ipecac. Neut. (q.v.) more suitable for general use.

Acet. Ipecac. Dulc.

Vinegar of Ipecac.	- - -	1 part
Golden Syrup	- - -	2 parts

Dose : $\frac{1}{2}$ to 1 dr.

Acet. Scillæ

Fluid extract of Squills	- -	2 $\frac{1}{2}$ oz.
Glycerin	- - -	2 $\frac{1}{2}$ oz.
Dilute Acetic acid	- -	to 20 oz.

Keeps better than B. P. Acetum. Aqueous Tincture of Squills and Elixir Scillæ neutralis (q.v.) are more suitable for general use, as they are compatible with both alkalies and acids.

Acet. Scillæ Dulc.

Vinegar of Squills	- - -	1 part
Golden Syrup	- - -	2 parts

Dose : $\frac{1}{2}$ to 1 dr.

ACIDA—Dilute Acids.

Acid. Acetic. dil. B.P.

Acetic acid	- - -	2 $\frac{1}{2}$ fl. oz.
Water	- - -	to 20 fl. oz.

Acid. Hydrochloric. dil. B.P.

Pure Hydrochloric acid	- -	6 oz.
Water	- - -	to 20 fl. oz.

Acid. Nitric. dil. B.P.

Pure Nitric acid	-	-	-	-	3 oz. 7 dr.
Water	-	-	-	-	to 20 fl. oz.

Acid. Nitro-Hydrochloric. dil. B.P.

Pure Nitric acid	-	-	-	-	4 part
Pure Hydrochloric acid	-	-	-	-	1 part
Water	-	-	-	-	to 8 parts

Acid. Phosphoric. dil. B.P.

Conc. Phosphoric acid	-	-	-	-	3 fl. oz.
Water	-	-	-	-	to 20 fl. oz.

Acid. Sulphuric. dil. B.P.

Pure Sulphuric acid	-	-	-	-	1 oz. 5½ dr.
Water	-	-	-	-	to 20 fl. oz.

AQUÆ—Aromatic Waters.**Aq. Camph. B.P.**

Camphor	-	-	-	-	1
Alcohol 90%	-	-	-	-	3
Water	-	-	-	-	to 1000

*****Aq. Camph. Conc.**

Camphor	-	-	-	-	140 grs.
Alcohol 90%	-	-	-	-	1 oz.

6 mins. to an 8-oz. bottle to form Aq. Camph. B.P.

Aq. Chloroformi B.P.

*Chloroform	-	-	-	-	30 mins.
Distilled water	-	-	-	-	to 25 oz.

Aq. Chloroformi Conc.

Chloroform	-	-	-	-	1
Alcohol 90%	-	-	-	-	to 10

Twice the strength of Spts. Chlorof. B.P.

1½ drs. to 8 oz. water, to form Aq. Chlor. B.P.

Aq. Chloroformi Conc.

(Syn. Emuls. Chloroformi.)

Chloroform	-	-	-	-	1 oz.
Tincture of Senega	-	-	-	-	1 oz.
(Or Tinct. of Quillaia	-	-	-	-	½ oz.
Water	-	-	-	-	to 20 oz.

Same strength as B.P., Spts. Chlorof. ; 3 drs. to an 8-oz. bottle to form Aq. Chlor. Immediately miscible with water.

***Aq. Chlorof. Conc. 1 to 64.

Chloroform	-	-	-	3 oz.
Tincture of Senega	-	-	-	3 oz.
(Or Fluid extract of Quillaia	-	-	-	$\frac{1}{2}$ oz.)
Water	-	-	-	to 20 oz.

Shake well before using. 1 dr. to an 8-oz. bottle, 45 mins. to a 6-oz. bottle to form Aq. Chlorof. Is more convenient than last formula for rapid dispensing. Very economical.

Aq. Glycyrrhizæ (St. Bart's)

Commercial Liquorice	-	-	-	$\frac{1}{2}$ oz.
Water	-	-	-	to 20 fl. oz.

Shake with 30 mins. chloroform to preserve it.

Aq. Medicatæ Omnes. (L.H.)

Essential oil	-	-	-	6 mins.
Alcohol 90 $^{\circ}$ ₆	-	-	-	24 mins.
Water	-	-	-	12 fl. oz.

***Aq. Medicatæ Omnes.

Essential oil	-	-	-	1 part
Alcohol 90 $^{\circ}$ ₆	-	-	-	4 parts

20 mins. to an 8-oz. bottle for the extemporaneous preparation of aromatic waters, such as anise, dill, cassia, gaultheria, peppermint, etc.

QUICK AND ECONOMICAL WAY OF PREPARING
AROMATIC WATERS.

The extemporaneous preparation of aromatic waters by other methods than those recognized by the B.P. is common, both with the dispensing chemist and the medical man. One way is to shake 1 dram of essential oil with $\frac{1}{2}$ a gallon of hot water, set aside until cold, and then decant the clear water. The concentrated waters, 1 to 40, of the wholesale druggist are merely solutions of the essential oil in weak spirit. The medical man in large club practice will find the following plan most suitable, quickest, and most economical for the extemporaneous preparation of medicated waters.

Aq. Medicatæ Omnes.

Essential oil	-	-	-	-	1 part
Alcohol 90%	-	-	-	-	4 parts

20 mins. to an 8-oz. mixture, 15 mins. to a 6-oz. bottle, 10 mins. to a 4-oz. Peppermint, anise, dill, cinnamon, cassia, winter-green, pimento, and other aromatic waters can be quickly prepared in this way. The corresponding B.P. spirit may be used, double the above quantities being required.

If accuracy is aimed at, it should be recollected that a drop is not a minim. Of this essence there are 142 drops in 60 mins. generally. Spts. menth. pip. and the other spirits B.P. are somewhat similar.

For convenience, the mixture of essential oil and spirit can be kept in a small drop-bottle. A small perfume bottle fitted with a sprinkler-top does excellently, or a simple drop-bottle can be made by cutting two grooves opposite each other in a cork, fitting this in a small bottle, and then cutting off the projecting end of the cork. When in use the liquid escapes from one groove in drops, while the other serves as an air inlet. A pill box or other covering over the top will serve to keep out dust, although, necessarily, there must be some evaporation of the contents. In emergencies this will be found a good way of making an extemporized chloroform drop-bottle. Colouring agents, as Sacch. ust. and Liq. cocci may be kept in these bottles.

CHLORODYNE.**Chlorodyne (cheap formula)**

Morphine acetate	-	-	-	1 dr.
Dilute Acetic acid	-	-	-	q.s. to dissolve
Spirits of Ether	-	-	-	5 fl. oz.
Tincture of Cannabis Indica	-	-	-	2½ fl. oz.
Dilute Hydrocyanic acid	-	-	-	9 fl. drs.
Chloroform	-	-	-	15 fl. drs.
Tincture of Capsicum	-	-	-	2½ oz.
Oil of Peppermint	-	-	-	1 dr.
Golden Syrup	-	-	-	to 30 fl. oz.

Chlorodyne 1885

(Tinct. Chloroformi et Morphinae.)

- | | | | | |
|-----|-----------------------------|---|---|------------|
| (1) | Morphine hydrochloride | - | - | 8 grs. |
| | Oil of Peppermint | - | - | 4 mins. |
| | Chloroform | - | - | 1 fl. oz. |
| | Alcohol 90% | - | - | 1 fl. oz. |
| | Ether | - | - | 2 fl. drs. |
| (2) | Liquid extract of Liquorice | - | - | 1 fl. oz. |
| | Golden Syrup | - | - | 1 fl. oz. |
| | Syrup | - | - | 3 fl. oz. |

Add (1) and (2) together and mix with :—

- | | | | | |
|-----|-------------------------|---|---|-----------------------|
| (3) | Dilute Hydrocyanic acid | - | - | $\frac{1}{2}$ fl. oz. |
| | Syrup | - | - | to 8 fl. oz. |

Dose : 5 to 10 mins. 10 mins. contain gr. $\frac{1}{4}$ morphia.

Preferred by many medical men to the preparation of the 1898 Pharmacopœia.

Chlorodyne 1898

(Tinct. Chlorof. et Morph. Co.)

- | | | | | |
|-----------------------------|---|---|---|-----------------------|
| Chloroform | - | - | - | 1 $\frac{1}{2}$ oz. |
| Morphine hydrochloride | - | - | - | 87 $\frac{1}{2}$ grs. |
| Dilute Hydrocyanic acid | - | - | - | 1 oz. |
| Tincture of Capsicum | - | - | - | $\frac{1}{2}$ fl. oz. |
| Tincture of Cannabis Indica | - | - | - | 2 fl. oz. |
| Oil of Peppermint | - | - | - | 14 mins. |
| Glycerin | - | - | - | 5 fl. oz. |
| Alcohol 90% | - | - | - | to 20 fl. oz. |

Contains about four times the proportion of morphine that the B.P. 1885 preparation does. This is an imitation of chloranodyne, introduced by Parke, Davis & Co. many years ago.

*****Liq. Chloromorphiæ**

(Improved formula, miscible.—*Martindale*.)

Contains in a
10 m. dose.

- | | | | | |
|-----------------------|---------------------------|---|---|-----------------------|
| 1 $\frac{1}{2}$ mins. | Chloroform | - | - | 3 fl. oz. |
| 4 mins. | Glycerin | - | - | 8 fl. oz. |
| 1 min. | Liquid ext. of Liquorice | - | - | 2 fl. oz. |
| $\frac{1}{4}$ gr. | Morphine hydrochloride | - | - | 87 $\frac{1}{2}$ grs. |
| $\frac{1}{4}$ min. | Sol. of Atropine sulphate | - | - | 3 drs. 12 mins. |
| $\frac{1}{10}$ min. | Oil of Peppermint | - | - | 19 mins. |
| | Alcohol 90% | - | - | to 20 fl. oz. |

Dose : 5 to 15 mins.

Dissolve the morphine in the liquid extract, glycerin.

and atropine solution previously mixed; in part of the alcohol dissolve the chloroform and peppermint, mix with the morphine solution, and add alcohol q.s. to 20 fl. oz. "Is a homogenous mixture and useful sedative." Contains the same amount of morphine as the B.P. 1898 preparation, and is perhaps the best formula for chlorodyne yet introduced.

Chlorodyne (Red)

Chloroform	-	-	-	-	2 fl. oz.
Ether	-	-	-	-	$\frac{1}{2}$ fl. oz.
Tincture of Cannabis Indica	-	-	-	-	1 fl. oz.
Tincture of Capsicum	-	-	-	-	1 fl. oz.
Morphine hydrochloride	-	-	-	-	20 grs.
Oil of Peppermint	-	-	-	-	16 mins.
Dilute Hydrocyanic acid	-	-	-	-	1 fl. oz.
Glycerin	-	-	-	-	3 fl. oz.
Water	-	-	-	-	1 fl. oz.
Cochineal colouring	-	-	-	-	q.s.
Alcohol 90%	-	-	-	-	16 fl. oz.

(MacEwan. P.F.)

Transparent Chlorodyne

Morphine hydrochloride	-	-	-	-	12 grs.
Alcohol 90%	-	-	-	-	$1\frac{1}{2}$ oz.
Tincture of Cannabis Indica	-	-	-	-	2 drs.
Oil of Peppermint	-	-	-	-	6 mins.
Tincture of Capsicum	-	-	-	-	1 dr.
Chloroform	-	-	-	-	$\frac{1}{2}$ oz.
Dilute Hydrocyanic acid	-	-	-	-	1 dr.
Glycerin	-	-	-	-	to 16 oz.

(MacEwan. P.F.)

To make it quite clear the Indian Hemp had better be omitted.

COLLODIA.

Coll. Vesicans (Off.)

Blistering liquid	-	-	-	-	40
Gun-cotton	-	-	-	-	1

Action confined to the part on which it is painted. It is specially useful to apply to the temple or behind the ear.

Coll. Callosum (Corn Solvent.—*Martindale*).

Salicylic acid	-	-	-	16	grs.
Extract of Cannabis Indica	-	-	-	2	grs.
Flexible Collodion ($\frac{3}{4}$ strength)	-	-	-	2	drs.

Applied daily forms a rapid and painless solvent for corns and warts.

*****Coll. Belladonnæ.**

(*Syn. Empl. Belladonnæ fluidum B.P.C.*)

Alcoholic ext. of Belladonna leaves	960	grs.
Alcohol 90%	-	9 oz.
Dissolve and add Ether	-	9 oz.

After 12 hours decant and dissolve in the mixture—

Camphor	-	-	-	130	grs.
Pyroxylin	-	-	-	$\frac{1}{2}$	oz.

Add sufficient spirit and ether in equal volumes to produce 20 oz.

Much superior to glycerin of belladonna. Used to arrest secretion of milk, and for inflamed breasts and lands, by application with a brush.

COLLUNARIA—Nasal Douches.

Dispensed with the following printed directions, without water: "One (or two) measured teaspoonfuls to be mixed (dissolved) in a tumbler (half a tumbler) of tepid water; half of the solution to be injected with a syringe along the floor of each nostril, night and morning. After use blow the nose freely."—(*C. T. H.*)

Coll. Acid. Carbolici C.T.H.

Glycerin of Phenol	-	-	-	1	dr.
Water	-	-	-	5 to 10	fl. oz.

Coll. Boracis C.T.H.

Glycerin of Borax	-	-	-	1	dr.
Water	-	-	-	to 10	fl. oz.

Coll. Pot. Permang. C.T.H.

Sol. of Potassium permanganate	-	-	-	1	dr.
Water	-	-	-	5 to 10	oz.

Dobell's Solution. Conc. 1 to 4.

Carbolic acid	-	-	-	-	80 grs.
Sodium chloride	-	-	-	-	
Borax	-	-	-	-	
Sodium bicarbonate	-		of each	160 grs.	
Glycerin	-	-	-	-	5 oz.
Water	-	-	-	-	to 10 oz.

1 part diluted with 3 parts of water.

DECOCTA.*****Dec. Aloes Co. Conc. 1 to 3.**

(Sine croco.)

Barbadoes Aloes	-	-	-	-	1 $\frac{1}{2}$ oz.
Myrrh	-	-	-	-	$\frac{3}{4}$ oz.
Potassium carbonate	-	-	-	-	$\frac{3}{4}$ oz.

Mix and add—

Fluid extract of Liquorice	-	-	6 oz.
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Dissolve and add—

Compound tincture of Cardamoms,	to 50 oz.
or Fluid. Card. Co. (1-3)	- - 10 oz.
Chloroform water	- - to 50 oz.

Strain, set aside, and after 7 days decant.

Dose : 1 to 4 drs. diluted.

ELIXIRS.*****Elixir Glusidi (B.P.C.)**

Saccharin	-	-	-	-	4 drs.
Sodium bicarbonate	-	-	-	-	2 drs.
Alcohol 90%	-	-	-	-	10 fl. drs.
Distilled water	-	-	-	-	to 10 fl. oz.

For sweetening mixtures. 20 mins. contain 1 grain, which is sufficient to flavour a 4-oz. mixture, and disguise the taste of cascara, sodium salicylate, strychnine, nux vomica, etc.

***Elixir Ipecac. Neutralis

Fluid extract of Ipecacuanha	-	-	-	-	1 oz.
Alcohol 90%	-	-	-	-	1 oz.
Glycerin	-	-	-	-	5 oz.
Water	-	-	-	-	to 20 oz.

Mix, after 3 days filter.

Compatible with both acids and alkalies ; same strength as Vin. Ipecac. B.P. but is more economical and keeps better, the tannin in the Vinum producing a deposit with the alkaloids.

**Elixir Antimoniale

Tartar emetic	-	-	-	-	40 grs.
Glycerin, pure	-	-	-	-	2 oz.
Chloroform water	-	-	-	-	to 20 oz.

Same dose and strength as the Vinum Antimoniale B.P.

***Elixir Colchici

Fluid Extract of Colchicum	-	-	-	-	4 oz.
Glycerin, pure	-	-	-	-	5 oz.
Chloroform water	-	-	-	-	to 20 oz.

Same dose and strength as the Vinum Colchici B.P.

***Elixir Scillæ Neutralis

Fluid Extract of Squills	-	-	-	-	2½ oz.
Glycerin, pure	-	-	-	-	5 oz.
Alcohol 90%	-	-	-	-	1 oz.
Chloroform water	-	-	-	-	to 20 oz.

Same dose and strength as Acet. Scillæ B.P.

Economical, and compatible with both acids and alkalies.

EMULSIONS.

Emuls. Blsmuthi

Bismuth carbonate	-	-	-	-	2 oz.
Sodium bicarbonate	-	-	-	-	2 oz.
Powdered Tragacanth	-	-	-	-	20 grs.
Water	-	-	-	-	to 24 oz.

Dose : 1 dr. which contains 5 grs. bismuth. Should be prepared by trituration in a mortar.

Emuls. Chloroformi

(See Aq. Chlorof. conc.).

Emuls. Creosoti (Vict. Park Hosp.)

Creosote	-	-	-	-	$\frac{1}{2}$ oz.
Compound tincture of Gentian	-	-	-	-	$1\frac{1}{2}$ oz.
Alcohol 90 %	-	-	-	-	$1\frac{1}{2}$ oz.
Fluid extract of Liquorice	-	-	-	-	3 oz.
Water	-	-	-	-	to 48 oz.

Dose : 1 oz. which contains 5 mins. creosote.

A fairly palatable mixture in phthisis.

GARGARISMATA—Gargles.

Dispensed with the followed directions :—" The Gargle to be used frequently in the following manner. Take a small quantity of the gargle in the mouth, hold it in the back part of the throat with the head thrown back, then closing the nose with finger and thumb, open the mouth and make the movements of swallowing, without letting the liquid go down the throat. No harm need be feared if some of the liquid should happen to be swallowed."

Garg. Acid. Carbolici (C.T.H.)

Glycerin of Phenol	-	-	-	-	10 mins.
Water	-	-	-	-	to 1 oz.

Garg. Acid. Tannici (C.T.H.)

Tannic acid	-	-	-	-	10 grs.
Water	-	-	-	-	10 oz.

Garg. Aluminis (C.T.H.)

Alum	-	-	-	-	5 grs.
Water	-	-	-	-	1 oz.

Garg. Aluminis et Ac. Tannici (C.T.H.)

Alum	-	-	-	-	5 grs.
Tannic acid	-	-	-	-	5 grs.
Water	-	-	-	-	to 1 oz.

Garg. Boracis (C.T.H.)

Glycerin of Borax	-	-	-	-	45 mins.
Water	-	-	-	-	to 1 oz.

Garg. Pot. Chlor. (C.T.H.)

Potassium chlorate	-	-	-	-	10 grs.
Glycerin	-	-	-	-	15 mins.
Water	-	-	-	-	to 1 oz.

GARGARISMATA—Gargles. (Conc.)

****Garg. Aluminis (C.T.H.)**

			Conc. 1 to 1
Alum	-	-	2 oz.
Liq. Rosæ dulc. (p. 47)	-	-	q.s.
Water	-	-	to 48 oz.

Garg. Acid. Tannici (Fever II.)

Each oz. contains			Conc. 1 to 4.
20 grs.	Tannic acid	-	3 $\frac{1}{2}$ oz.
70-mins.	Glycerin	-	11 $\frac{2}{3}$ oz.
	Compound infusion of		
	Roses	-	to 20 oz.

Garg. Pot. Chlor. (Lond. Oph.)

Each oz. contains			Conc. 1 to 1.
4 $\frac{1}{2}$ grs.	Potassium chlorate	-	6 drs.
6 mins.	Dilute Hydrochloric acid		1 oz.
24 mins.	Glycerin	-	4 oz.
	Water	-	to 20 oz.

Garg. Acid. Carbolici (Throat)

Each oz. contains			Conc. 1. to 4.
2 grs.	Carbolic acid	-	160 grs.
48 mins.	Glycerin	-	8 oz.
	Water	-	to 20 oz.

Garg. Ferri c. Pot. Chlor.

			Conc. 1 to 4.
Potassium chlorate	-	-	3 oz.
Solution Iron perchloride	-	-	6 oz. 5 dr. 20 m.
(Glycerin	-	-	10 oz.)
Water	-	-	to 80 oz.

Dose : 2 drs. diluted to 1 oz.

GLYCERINA.

(Glyc. Acid. Borici	-	-	6 in 20 (by weight)
(Glyc. Acid. Carbolici B.P.			
Phenol	-	-	1
Glycerin (by volume)	-	-	to 5

Glyc. Acid. Tannici B.P.

Tannic acid	-	-	-	-	1
Glycerin (by volume)	-	-	-	to	5

Glyc. Aluminis B.P.

Alum	-	-	-	-	4 oz.
Distilled water	-	-	-	-	1½ oz.
Glycerin (by volume)	-	-	-	to	24 oz.

"Glyc. aluminis is a useful astringent pigment in chronic pharyngitis, less disagreeable than tannin."—(*B.M.J.* vol. 1, 1885, p. 178).

Glyc. Aurantii**Glyc. Ipecac.****Glyc. Ferri iod.****Glyc. Ferri et Quin. cit.****Glyc. Scillæ**

Are non-official preparations made by replacing syrup with glycerin. They keep better, and do not discolour like the B.P. Syrups of iron iodide and Easton.

Glyc. Ol. Ricini

Castor oil	-	-	-	-	-
Glycerin	-	-	-	of each	1 part

Triturate in a mortar and flavour with essence of lemon.

Dose : A teaspoonful or more.

Note.—The "castor-oil pills" of the chemist contain less than a minim of castor oil, the real cathartic ingredients being generally croton oil and aloes.

GUTTÆ—Drops.

Dispensed with the following directions :—"The Ear-drops—A few drops previously warmed to be applied on cotton wool inside the ear every night and morning."

Note.—So as not to run a risk of ear-drops being employed at too high a temperature, it is recommended that they be warmed by pouring the required quantity into a teaspoon previously scalded by immersion for a second or two in boiling water."—(*C.T.H.*)

Guttæ Acid. Borici (C.T.11.)

Boric acid	-	-	-	-	6 grs.
Water	-	-	-	-	1 oz.

Guttæ Acid. Borici c. Spiritu (C.T.H.)

Methylated spirit	-	-	-	2 fl. drs.
Boric acid drops	-	-	-	to 1 fl. oz.

Guttæ Acid. Borici c. Opio (C.T.H.)

Tincture of Opium	-	-	-	1 dr.
Glycerin	-	-	-	2 drs
Boric acid drops	-	-	-	to 1 oz.

Guttæ Acid. Carbolici (C.T.H.)

Carbolic acid	-	-	-	5 grs.
Glycerin	-	-	-	2 drs.
Water	-	-	-	to 1 oz.

*****Guttæ Dent. (Tooth drops)**

Menthol	-	-	-	1 oz.
Alcohol 90%	-	-	-	to 5 oz.

Dispensed in 1 dr. vials with directions: "To be brushed over the tooth and gums to relieve pain."

****Guttæ Sod. Co. (C.T.H.)**

Sodium bicarbonate	-	-	-	3 drs. 20 grs.
Carbolic acid	-	-	-	20 grs.
Glycerin	-	-	-	5 fl. oz.
Water	-	-	-	to 20 oz.

Dispensed in 1 dr. vials with directions:—"Warm a teaspoon by dipping it in hot water. Pour the drops in so as to gently warm them, drop into the ears at night." Used for softening impacted cerumen before syringing.

Guttæ Thymol

Thymol	-	-	-	20 grs.
Glycerin	-	-	-	1 oz.
Liq. Rosæ dulc. (p. 47)	-	-	-	1 dr.
Alcohol 90%	-	-	-	to 2 oz.

A few drops in half a tumbler of water as a mouth wash to remove the smell of tobacco smoke.

GUTTÆ—Drops for Ophthalmic use.

No. 1—

Solution Adrenalin chloride (1 : 1000)

(Takamine)	-	-	-	0.5
Cocaine hydrochloride	-	-	-	0.1
Sterile water	-	-	-	10.0

(Davies.)

To produce anæmia and anæsthesia when extracting foreign bodies or doing operations, as cautery.

No. 2—

Sol. Adrenalin chloride (Takamine) 1·0 to 2·5
 Perchloride of Mercury lotion (1 : 2000) 10·0

Used six to eight times daily, a specific in conjunctivitis.

No. 3—

Sol. Adrenalin chloride (Takamine) 1·0
 Cocaine hydrochloride - - - 0·2
 Zinc Sulphate - - - 0·2
 Distilled Water - - - 10·0

(*Darier.*)

In chronic conjunctivitis.

No. 4—

Solution Adrenalin chloride (1 : 1000)
 (Takamine) - - - 1·0
 Pilocarpine hydrochloride - - 0·1
 Eserine salicylate - - - 0·02
 Sterile Water - - - 10·0

(*Darier.*)

In Glaucoma, when operation contra-indicated, used two to eight times daily.

QUICK AND ACCURATE METHOD OF PREPARING EYE-DROPS, ATROPINE, COCAINE, &C.

Solutions intended as drops for the eyes should invariably be freshly prepared, as they often become fungoid. This is more especially the case with cocaine. Such drops are troublesome to prepare, as considerable time is taken up in weighing and measuring. Messrs. Parke, Davis & Co., however, have reduced the question of preparing such solutions to its simplest form. They manufacture special ophthalmic tablets each containing a definite quantity of medicament readily soluble in distilled water. Thus to make a 4 per cent. solution of cocaine, all that one requires to do is to drop a 2½-gr. tablet into a drachm of distilled water. These tablets are supplied at a price which makes it no economy for the medical man either to prepare his solutions from crystallized cocaine or to purchase them ready-made from the chemist. To the country doctor, and in practices where eye-drops are not often dispensed, these tablets are invaluable for

accuracy, simplicity, and economy. Parke, Davis & Co. also supply a graduated bottle fitted with an improved form of pipette, in which solution of the tablets can be accurately effected. The following list of tablets which they manufacture meet almost every requirement of the general practitioner in eye work. They can be had in tubes of 25 or bottles of 100, boric acid being the diluent used where such is necessary.

Tablets for Eye-Drops.

Atropine sulphate	-	-	-	-	1 gr.
Boric acid	-	-	-	-	5 grs.
Cocaine	-	-	1 $\frac{1}{8}$ grs.,	2 $\frac{1}{4}$ grs.,	3 grs.
Copper sulphate	-	-	-	-	1 gr.
Eserine (<i>see</i> Physostigmine)					
Homatropine hydrobromide	-	-	-	-	$\frac{1}{2}$ gr.
Physostigmine salicylate	-	-	-	-	$\frac{1}{8}$ gr.
Sodium borate	-	-	-	-	5 grs.
Tannic acid	-	-	-	-	5 grs.
Zinc sulphate	-	-	-	-	1 gr.

INFUSA—Infusions.

“Home-made infusions generally give more satisfaction than the concentrated purchased articles, but they lack stability. As a rule, 2 drs. chloroform to a Winchester quart of infusion will keep it good indefinitely.”—(A. W. Gerrard, F.C.S., in *Practitioner*).

All the bitter infusions have practically the same properties, and hence the medical man in large club practice uses generally but two, quassia and gentian. They are usually made up in large quantities, 80 oz. or 3 gallons at a time, and preserved with chloroform. They are quickest prepared from fluid extracts, remembering that 1 part of extract equals 1 part of crude drug.

Inf. Gent. Co. (London).

Gentian root (or Fl. Ext.)	-	-	-	8 drs.
Ginger	-	-	-	4 drs.
Boiling water	-	-	-	to 80 fl. oz.

Inf. Gent. Co. (Guy's '97).

Sliced Gentian root (or Fl. Ext.) - 8 drs.

Dried Orange peel (or Fl. Ext.) - 8 drs.

Boiling water - - - - - to 80 oz.

Infuse 1 hour, and add Essence of Lemons 320 mins.

*****Inf. Gent. Simplex**

Sliced Gentian root (or Fl. Ext.) 4 oz.

Boiling water - - - - - to 3 galls.

Cold water extracts the active principle of gentian root, but it also extracts the albumin, so that the infusion quickly ferments. Besides, in these days of rigid asepticism, a cold water infusion is an anachronism.

Inf. Gent. Co.

Conc. 1 to 8.

Gentian root, No. 10 powder - - 4 oz.

Bitter Orange peel, No. 10 powder 4 oz.

Tincture of Lemons, B.P. - - 4 oz.

Alcohol 90% - - - - 7 oz.

Distilled water - - - - q.s.

Moisten powders with half a pint of water, set aside in a covered vessel for 12 hours. Pack lightly in a percolator, and, adding more water continue the percolation until 29 oz. is collected. Add the tincture and alcohol with water q.s. to produce 40 oz. Set aside 48 hours and filter.—*P.F.*

Inf. Gent. Co.

Conc. 1 to 16.

Fluid extract of Gentian - - 4 oz.

Fluid extract of bitter Orange - 4 oz.

Tincture of Lemons, B.P. - - 4 oz.

Water - - - - - to 20 oz.

 $\frac{1}{2}$ oz. to an 8-oz., 3 drs. to a 6-oz. mixture.

This is twice the usual strength.

Inf. QuassiæFluid extract Quassia - - - $\frac{3}{4}$ oz.

Cold water - - - - - 75 oz.

Shake up with $1\frac{1}{2}$ drs. chloroform.*****Inf. Amarum**

Conc. 1 to 128

Oil of Lemons - - - - 2 drs.

Fluid extract of Quassia - - to 16 fl. oz.

30 mins. to an 8-oz. mixture. Compatible with iron salts. Economical and easily dispensed.

THE EXTEMPORANEOUS PREPARATION OF INFUSIONS.

Fresh infusions (with the possible exception of *digitalis*) are never used by the medical man who dispenses his own medicines, and it is only in a few chemists' shops that the strict letter of the B.P. is carried out. The 1 to 10 liquors of the 1898 B.P. are practically not used by the dispensing practitioner. In the same way as spirituous solutions of essential oils can be used for the extemporaneous preparation of medicated waters, so fluid extracts may be used for the preparation of some infusions by simply adding the required quantity to an 8-oz. or 6-oz. bottle. Thus for quassia, only 38 minims of fluid extract are required to make 8 oz. of infusion. They are more stable than the concentrated 1 to 8 infusions, and, being less bulky, more easily and rapidly dispensed. They are quite as reliable therapeutic agents as aqueous infusions prepared at the time of using. The following table gives some of the commoner infusions, and the respective quantities of fluid extract required to prepare them extemporaneously. For the 1 to 20 infusions 3 drs. to an 8-oz. bottle and 2 drs. to a 6-oz. is near enough. Convenient although this method is, and yielding products indistinguishable from those made by the official process, yet the dispensing chemist would hardly be justified in adopting it, unless specially sanctioned by the prescriber.

Name of Infusion.	Proportion.	Quantity of fluid extract required.	
		8 oz.	6 oz.
Inf. Aurantii	1 to 20	3 drs. 12 mins.	2 drs. 24 mins.
" Buchu	" "	" "	" "
" Calumba	" "	" "	" "
" Caryophyll.	" 40	96 mins.	72 mins.
" Chirata	" 20	3 drs. 12 mins.	2 drs. 24 mins.
" Gent. Simpl.	" 80	48 mins.	36 mins.
" Gent. Comp.	" 16	4 drs.	3 drs.
" Quassia	" 100	38 mins.	28 mins.
" Rhei	" 20	3 drs. 12 mins.	2 drs. 24 mins.
" Scoparii	" 10	6 drs. 24 mins.	4 drs. 48 mins.
" Senegæ	" 20	3 drs. 12 mins.	2 drs. 24 mins.

INJECTIONS.

Inj. Astringens (Lond. Oph.)

1 oz. contains		Conc. 1 to 4.	
	Alum - - -		
āā 4 grs.	Zinc sulphate	of each	320 grs.
1½ grs.	Tannic acid - - -		2 drs.
	Water - - -	to	20 oz.

Inj. Aluminis et Zinci (Royal Free)

1 oz. contains		Conc. 1 to 4.	
3 grs.	Alum - - -		
3 grs.	Zinc sulphate	of each	4 drs.
	Water - - -	to	20 oz.

Inj. Zinci Permang.

1 oz. contains		Conc. 2 to 4.	
⅓ gr.	Zinc permanganate - -		10 grs.
	Water - - -	to	20 oz.

Inj. Comp. pro Gon.

1 oz. contains		Conc. 1 to 4.	
1 dr.	Tincture of Opium - -		5 oz.
1 dr.	Tincture of Catechu - -		5 oz.
4 grs.	Alum - - -		2 drs. 40 grs
4 grs.	Zinc sulphate - - -		2 drs. 40 grs.
2 mins.	Liq. Carbolic acid - -		80 mins.
	Water - - -	to	20 oz.

Somewhat resembles the French remedy—Injection Brou.

See also "Compressed Tablets."

Vaginal Injections

Dissolve in a pint of warm water :—

One teaspoonful Lead acetate (about 3 drs.)		
		= 9 grs. per oz.
„	„	Zinc sulphate (about 2 drs.)
		= 6 grs. per oz.
„	„	Alum (about 2 drs.)
		= 6 grs. per oz.
Four teaspoonfuls Tannic acid (about 2 drs.)		
		= 6 grs. per oz.

LINCTI.

Linctus Morph. c. Chlorof.

3 mins.	Sol. of Morphine hydro-			
	chloride	-	-	3 oz. 6 drs.
1 min.	Chloroform	-	-	6 drs.
15 mins.	Mucilage of Tragacanth	-	-	1 1/4 oz.
1 dr.	Water	-	-	to 45 oz.
Dose : 1 dr.				

Linctus Simplex (Consumption)

Golden Syrup	-	-	-	1 part
Chloroform water	-	-	-	to 3 parts

Linctus Limonis (C.T.H.)

5 mins.	Sol. of Morphine hydro-			
	chloride	-	-	3 oz. 6 drs.
25 mins.	Syrup of Lemons	-	-	20 oz.
1 dr.	Water	-	-	to 45 oz.
Dose : 1 dr.				

Linctus Camph. Co. (Royal Chest)

1 dr. contains

20 mins.	Compound Tincture of			
	Camphor	-	-	-
20 mins.	Syrup of Tolu	-	-	-
20 mins.	Oxymel of Squills	-	-	āā pts. æq.
Dose : 1/2 dr. to 1 dr.				

LINIMENTA—Liniments.

*****Lin. Album (White Oils)**

Soft soap	-	-	-	6 oz.
Ammonium chloride	-	-	-	2 oz.
Boiling water	-	-	-	3 pints
Cool and add				
Turpentine	-	-	-	16 oz.

****Lin. Album (Q.J.H.)**

Strong solution of Ammonia	-	-	-	4 oz.
Nut oil	-	-	-	8 oz.
Turpentine	-	-	-	8 oz.
Water	-	-	-	to 80 oz.

Lin. Ammoniaë

Solution of Ammonia	-	-	-	1 part
Olive oil (rape oil L.H.)	-	-	-	3 parts

Lin. Belladonnæ

Liquid extract of Belladonna	-	10 oz.
Camphor	- - - -	1 oz.
Distilled water	- - - -	2 oz.
Alcohol 90%	- - - -	to 20 oz.

Lin. Calcis (Carron Oil)

Solution of Lime	- - - -	
Olive oil (Linseed oil, <i>Russian Ph.</i>)		pts. æq.

*****Lin. Commune (R.S.H.I.)**

Strong solution of Ammonia	- -	6 oz.
Turpentine	- - - -	4 oz.
Simple Soap liniment (R.S.H.I.)		to 80 oz.

Lin. Saponis Simpl. (R.S.H.I.)

Soft soap	- - - -	8 oz.
Boiling water	- - - -	to 80 oz.

An efficient, economical embrocation for works practice.

*****Lin. Saponis Mollis. (Middlesex)**

Soft soap	- - - -	8 oz.
Boiling water	- - - -	to 80 oz.

With methylated spirit q.s. to make a clear solution forms Lin. universale of the wholesale druggist.

LIQUORS.****Liq. Ammon. (B.P.)**

Strong solution of Ammonia	-	1 part
Distilled or Rain water	- -	2 parts

*****Liq. Ammon. Acet.**

		Conc. 1 to 8.
Glacial Acetic acid	- -	20 oz.
Powdered Ammonium carbonate		
Water	- - -	q.s. to 45 oz.
		<i>Chem. and Drug.</i>

Neutralize as far as possible, testing frequently with litmus paper. This is practically the only preparation used by the medical man; the weak solution, especially, quickly becomes fungoid.

Liq. Calcis. Sacch. (B.P.)

Calcium hydroxide	-	-	-	1 oz.
Sugar	-	-	-	2 oz.
Water	-	-	-	20 oz.

14 times stronger than Aq. Calcis B.P.

Liq. Calcis Iodinatæ

Introduced by Dr. Hugh Woods as an inexpensive substitute for potassium iodide in syphilis, scrofula, rheumatism, gout, etc.

****Liq. Carmini (After Martindale)**

Carmine	-	-	-	-	480 grs.
Water, to moisten	-	-	-	-	q.s.
Strong solution of Ammonia	-	-	-	-	1 oz.

Dissolve and add—

Water	-	-	-	-	to 12 oz.
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A cheap formula for a red colouring.

*****Liq. Carmini (U.S.P.)**

Carmine	-	-	-	-	480 grs.
Solution of Ammonia B.P.	-	-	-	-	6 fl. oz.
Glycerin	-	-	-	-	6 fl. oz.
Water	-	-	-	-	to 16 fl. oz.

Liq. Carmini Dulc.

(Syn. Liq. Rosæ Dulc.)

Carmine	-	-	-	-	3 parts
Distilled water	-	-	-	-	3 parts
Solution of Ammonia B.P.	-	-	-	-	4 parts

Dissolve and add gradually :

Glycerin	-	-	-	-	18 parts
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Heat in a water bath until free from odour of ammonia. When cool add solution of ammonia 1 pt., soluble saccharin 1 pt. and rose water q.s. to 24 pts.

Liq. Chloral Hyd. 1 in 1.

Dissolve 3 oz. (1312.5 grs.) of chloral in 1 fl. oz. water. The product measures 2 fl. oz. $5\frac{1}{2}$ drs. Add 55 mins. of water and each minim will contain a grain of chloral.—(Squire).

Very convenient for rapid dispensing. Keeps well.

*****Liq. Ferri Perchlor. (B.P.)**

Strong solution of Iron perchloride	1	part
Water - - - - -	3	parts

****Liq. Hydrarg. Perchlor. (B.P.)**

Mercury perchloride - - -	10	grs.
Distilled water - - -	20	oz.

If ordinary tap water be used, a little HCl, iodide of potassium, or sodium chloride will keep it clear.

Liq. Iodi Fortis (B.P.)

Iodine - - - - -	5	parts
Potassium iodide - - -	3	parts
Distilled water - - -	5	parts

Dissolve and add

Alcohol 90% - - - - -	36	parts
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See also Pigmentum iodi and Pigm. iodi etherum.

*****Liq. Morph. Acet. (B.P.)**

Morphine acetate - - -	70	grs.
Alcohol 90% - - - - -	4	oz.
Water - - - - -	to 16	oz.

If half the quantity of glycerin be substituted for the alcohol, the tendency of the morphine salt to crystallize about the stopper will be prevented, and less evaporation will take place. Some practitioners prefer a simple solution in chloroform water.

*****Liq. Morph. Hydrochlor. (B.P.)**

Morphine hydrochloride - -	70	grs.
Dilute Hydrochloric acid - -	2	drs. 32 m.
Alcohol 90% - - - - -	4	oz.
Water - - - - -	to 16	oz.

A better preparation can be made with glycerin, as with Liq. Morph. Acet.

Liq. Morph. c. Ipecac. (Syn. Liq. Doverii.)

Morphine acetate - - -	1	dr.
Dilute Acetic acid - - -	1	oz.
Fluid Ext. Ipecacuanha - -	48	mins.
Alcohol 90% - - - - -	2½	oz.
Chloroform water - - -	to 10	oz.

Dose : 10 to 20 mins.

Liq. Pot. Permang. (B.P.)

Potassium permanganate	-	-	88 grs.
Water	-	-	to 20 oz.

Half the strength of Condyl's Fluid.

*****Liq. Strychninæ (B.P.)**

Strychnine hydrochloride	-	-	70 grs.
Alcohol 90%	-	-	4 oz.
Water	-	-	to 16 oz.

2 oz. of glycerin used instead of the alcohol forms a cheaper and just as efficient a preparation. Tendency to evaporation and crystallization around the stopper prevented.

****Liq. Sacchar. Ust.**

Burnt Sugar	-	-	1 part
Water	-	-	8 parts

Pours readily, and there is no difficulty in obtaining a uniform colour in mixtures.

Liq. Flava

Saffron	-	-	1 oz.
Alcohol 60%	-	-	5 oz.

A yellow colouring for mixtures.

LOTIONS.

****Lotio Acid. Carbolici 1 in 20**

Pure Carbolic acid	-	-	4 oz.
Hot water	-	-	to 80 oz.

*****Lotio Acid. Borici 1 in 30**

Boric acid	-	-	2½ oz.
Cold water	-	-	to 75 oz.

Lotio Calamlnaris Conc. (U.C.H.) Conc. 1 to 2.

Levigated Calamine	-	-	2 parts
Powdered Zinc oxide	-	-	1 part
Glycerin	-	-	1 part
Water	-	-	to 12 parts

Diluted with an equal quantity of water.

Lotio Creolini 2

Cyllin (Jeyes')	-	-	1 oz.
Water	-	-	to 50 oz.

Lotio Evaporans (Charing Cross)				Conc. 1 to 3.
Ammonium chloride	-	-	-	2 oz.
Methylated spirit	-	-	-	4 oz.
Water	-	-	-	to 20 oz.

Lotio Evaporans (Royal Free)				
Methylated spirit	-	-	-	1½ oz.
Water	-	-	-	to 1 pint

**Lotio Hamamelis				Conc. 1 to 4.
Distilled extract of Witchhazel (or				
Hazeline)	-	-	-	2 oz.
Water	-	-	-	to 20 oz.

Dilute with 3 parts of water to form a good application for sprains and bruises.

Lotio Hydrarg. Biniod. 1 in 500. (L.R.I.)				
Mercury perchloride	-	-	-	80 grs.
Potassium iodide	-	-	-	5 drs.
Cochineal	-	-	-	2 drs.
Methylated spirit	-	-	-	to 80 oz.

For disinfecting skin and hands.

Lotio Hydrarg. Perchlor. 1 in 500				
Mercury perchloride	-	-	-	80 grs.
Methyl blue (dissolved in spirit and				
water)	-	-	-	12 grs.
Water	-	-	-	to 80 oz.

***Lotio Hydrarg. Perchlor. Conc.				
Mercury perchloride (approx. 6½ drs.)				384 grs.
Methyl blue	-	-	-	q.s.
Glycerin	-	-	-	2½ oz.
Methylated spirit	-	-	-	2½ oz.

One fl. dr. added to 1 pint water = 1 in 1000; to 2 pints, 1 in 2000; to 3 pints, 1 in 3000, etc.

**Lotio Plumbi c. Opio (Q.J.H.)				
Solution of Lead subacetate	-			1 part
Tincture of Opium	-	-	-	2 parts
3 drs. to a pint of water.				

****Lotio Rubra Conc. 1 to 4 (U.C.H.)**

Zinc sulphate	-	-	-	5 drs. 20 grs.
Compound tincture of Lavender	-	4	oz.	
(or Fluid Lavender Conc. 1-4)	-	1	oz.	
Water	-	-	-	to 20 oz.

1 part diluted with 3 parts of water form 4 parts of Red Lotion as an application to unhealthy granulations.

MISTURÆ CONC.—Concentrated Mixtures.

The following concentrated mixtures have mostly been selected from formulæ in use in the London hospitals. They have purposely been chosen simple in composition, so that they may be regarded as *bases* to which suitable additions to suit particular cases may be added at the will of the prescriber. They have been made as concentrated as possible, since they keep better so; but in practices where they are not used up very quickly it is a good plan in all cases to add $\frac{1}{2}$ dr. of chloroform to each 40 oz. so as to preserve them.

The general plan is to regard the dose of every mixture when diluted as 1 oz., and concentrate them 1 to 7 or 1 to 3. Here the plan followed is to express the ingredients in parts (which may be regarded as drachms, ounces, or pounds) and regard them as compound tinctures with a stated medium dose of 1 dr. (or 2 drs. in the case of some), and at the same time to give in the left hand margin the quantity of ingredients contained in this medium dose. By this method it is hoped that the danger of getting into a wooden and mechanical habit of simply diluting 1 part of mixture with 7 of water and thus giving exactly similar doses to persons of widely different physique will be obviated. Bearing in mind the quantities contained in the medium dose, the prescriber can readily reduce or augment this dose to suit particular cases, just as readily as he does in the case of a simple or compound tincture or infusion.

The mixtures given are merely examples of the methods of formulating concentrated medicines

mixed ready for use, and give reflex indications of the practice and combinations in daily use in the London hospitals. Concentrated mixtures prepared by the wholesale druggist are largely used by the busy medical man, but by the help of the method described of expressing the quantities of all ingredients in parts, he is enabled to design his own formulæ, and to quickly calculate the amount of ingredients required to make any desired quantity of concentrated mixture. The wholesale chemists are always willing to make any private formulæ, whether for mixtures, tablets, triturates, or ointments. If fluid extracts be used in the manufacture, the cost will in many cases be only one-fourth of what it would be were B.P. tinctures used. Aromatic waters, as camphor, cinnamon, etc., should be made extemporaneously at the time of dispensing in the manner already described; the various formulæ have not been calculated for them, as that would needlessly complicate matters.

Like solutions, these mixtures are easiest handled in 2-pint bottles, unless the practitioner cares to go to the expense of a set of tapped glass or stoneware jars. Even in that case mixtures with solid ingredients not in solution would require to be in bottles, owing to the difficulty of shaking bulky jars. In the case of mixtures not containing potent ingredients it is often the custom to dispense them without using the measure-glass, the graduations on the dispensing bottle alone serving as a measure.

To quickly calculate quantities of ingredients required for making any desired amount of concentrated mixture.

Take the following as an example—

Mist. Ferri Amara (U.C.H.)

Solution of Iron perchloride	-	-	30 mins.
Spirit of Chloroform	-	-	5 mins.
Infusion of Quassia	-	-	to 1 oz.

Suppose we wish to make a concentrated mixture 1 to 8, 1 oz. of which added to 7 oz. of water will form a mixture as above. Reduce to minims and divide the total dose by 8, or if we want a 1 to 4 mixture, by 4. Our formula will then stand expressed

in parts, which may be regarded as minims, drachms, ounces, or lbs.

	Conc. 1 to 8.	Conc. 1 to 4.
Sol. of Iron perchlor.	30 parts	30 parts
Spirit of Chloroform	5 „	5 „
Inf. of Quassia	to 60 „	to 120 „

Divide by 5 and we get a formula which is extremely easy to work from, whether we wish to make a pint or a gallon.

Conc. 1 to 8.	Conc. 1 to 4.
$30 \div 5 = 6$ parts	$30 \div 5 = 6$ parts
$5 \div 5 = 1$ „	$5 \div 5 = 1$ „
$60 \div 5 = 12$ „	$120 \div 5 = 24$ „

This method of formulating a concentrated mixture in parts, instead of the usual way, is also very convenient when it is desired to use fluid extracts instead of the corresponding tinctures; as all that we have to do is to divide by 8 or 4 according as the fluid extract is 8 or 4 times the strength of the B.P. tincture. The avoirdupois oz. of $437\frac{1}{2}$ grains only causes $\frac{1}{11}$ minus error, a quantity which is inappreciable in each dose of the diluted mixture. In the case of an ingredient expressed as a fractional part, divide 480 by the fraction to obtain the quantity expressed in grains.

1. Mist. Acid. Amara Conc. (St. Mary's)

Each 1 dr.
contains

10 mins. Dilute Nitro-hydrochloric
acid - - - - 1 part
Conc. Compound infusion
of Gentian (conc. 1-8) to 6 parts
Dose: 1 dr. diluted.

2. Mist. Aperiens Hepatica Conc.

1 dr. contains

6 mins. Liq. extract of Cascara - 6 parts
= 4 grs. (pulv.) Fluid extract of Rhubarb 4 parts
2 grs. Jalapin - - - 2 parts
 $\frac{1}{2}$ gr. Podophyllin - - - $\frac{1}{2}$ part
 $\frac{1}{2}$ min. Oil of Cassia - - - $\frac{1}{2}$ part
10 mins. Fluid extract of Liquorice 10 parts
Alcohol - - - to 60 parts

Dose: 10 to 60 mins. (modified from Dobell).

3. Mist. Acid. c. Opio Conc. (Charing Cross)

1 dr. contains

20 mins.	Dilute Sulphuric acid	-	4 parts
5 mins.	Tincture of Opium	-	1 part
20 mins.	Spirit of Chloroform	-	4 parts
	Cinnamon water	-	to 12 parts

Dose : 1 dr. diluted.

4. Mist. Acid. Sulphurici Conc. (U.C.H.)

1 dr. contains

12 mins.	Dilute Sulphuric acid	-	1 part
15 mins.	Tincture of Catechu	-	1 $\frac{1}{4}$ parts
	Water	-	to 5 parts

Dose : 1 dr. diluted.

5. Mist. Acid. Sulph. c. Opio Conc. (Royal Free)

1 dr. contains

20 mins.	Aromatic Sulphuric acid	-	4 parts
5 mins.	Tincture of Opium	-	1 part
	Water	-	to 12 parts

Dose : 1 dr. diluted.

6. Mist. Alba Conc.

2 drs. contain

60 grs.	Magnesium sulphate	-	40 oz.
15 grs.	Magnesium carbonate	-	10 oz.
$\frac{1}{2}$ min.	Oil of Peppermint	-	80 mins.
	Water	-	to 80 oz.

Dose : 2 drs. diluted.

7. Mist. Alkalina Amara Conc. (St. Mary's)

2 drs. contain

10 grs.	Sodium bicarbonate	-	1 part
5 mins.	Solution of Ammonia	-	$\frac{1}{2}$ part
	Chloroform water	-	12 parts
	Compound Infusion of		
	Gentian (conc. 1-7)	-	to 24 parts

Dose : 2 drs. diluted.

8. Mist. Alkalina Eff. Conc. (Royal Chest)

2 drs. contain

15 grs.	Sodium bicarbonate	-	1 part
15 grs.	Potassium bicarbonate	-	1 part
	Water	-	to 8 parts

Dose : 2 drs. diluted to 1 oz. to be taken when effervescing with 15 grs. Tartaric acid.

9. Mist. Ammon. Acet. Conc. (U.C.H.)

2 drs. contain

15 mins. Solution of Ammonium
acetate (conc. 1-7) - $1\frac{1}{2}$ parts10 grs. Potassium nitrate - - 1 part
Camphor water - - to 6 parts

Dose : 1 dr. diluted.

10. Mist. Ammon. c. Cinchon. Conc. (King's)

1 dr. contains

3 grs. Ammonium carbonate - 1 part
Inf. Cinchona (conc. 1-7) to 20 parts

Dose : 1 dr. diluted.

11. Mist. Ammon. c. Seneg. Conc. (U.C.H.)

1 dr. contains

4 grs. Ammonium carbonate - 1 part
9 mins. Spirit of Chloroform - $2\frac{1}{4}$ parts
Infusion of Senega (conc.
1-7) - - - to 15 parts

Dose : 1 dr. diluted.

12. Mist. Aromat. Conc. (St. Thomas's)

1 dr. contains

15 grs. Aromatic powder of Chalk 1 part
Peppermint water - to 4 parts

Dose : 1 dr. diluted.

13. Mist. Aromat. Conc. (St. Mary's)

2 drs. contain

10 grs. Sodium bicarbonate - 2 parts
5 grs. Ammonium carbonate - 1 part
30 mins. Compound tincture of Carda-
moms (or Conc. $1\frac{1}{2}$ pts.) 6 parts
Chloroform water - - 3 parts
Infusion of Cloves (conc.
1-7) - - - to 24 parts

Dose : 2 drs. diluted.

14. Mist. Astringens Conc. (L.H.)

1 dr. contains

15 mins. Aromatic Sulphuric acid $7\frac{1}{2}$ parts
20 mins. Spirit of Chloroform - 10 parts
 $7\frac{1}{2}$ mins. Compound tincture of
B.P. Camphor (conc. 1-7) - $3\frac{3}{4}$ parts
Decoction of Logwood
(conc. 1-7) - - to 30 parts

Dose : 1 dr. diluted.

15. Mist. Bismuthi Alk. (Throat)

1 dr. contains

10 grs.	Bismuth subnitrate	-	1 part
15 grs.	Magnesium carbonate	-	1½ parts
10 mins.	Solution of Potash	-	1 part
4 mins.	Dilute Hydrocyanic acid	-	$\frac{2}{3}$ part
	Peppermint water	- to	6 parts

Dose : 1 dr. diluted.

16. Mist. Bismuthi et Gent. Conc. (L.H.)

1 dr. contains

15 grs.	Bismuth subnitrate	-	1½ parts
15 grs.	Sodium bicarbonate	-	1½ parts
10 grs.	Comp. Tragacanth powder	-	1 part
	Compound Infusion of Gen- tian (conc. 1-7)	-	to 6 parts

Dose : 1 dr. diluted.

17. Mist. Bismuthi Rub. Conc.

Bismuth ammonio-citrate	-	-	1280 grs.
Solution of Ammonia B.P.	-	-	q.s.
Carminc solution	-	-	q.s.
Tincture of Nux vomica	-	-	8 fl. oz.
Dilute Hydrocyanic acid	-	-	2 fl. oz.
Glycerin	-	-	10 fl. oz.
Water	-	-	to 80 fl. oz.

Dose : $\frac{1}{2}$ to 1 dr. which contains the equivalents of
 Liq. bismuthi B.P. 1 dr., Tinct. nucis vom. 6 mins., Dilute
 hydrocyanic acid $1\frac{1}{2}$ mins.

18. Mist. Pepsini et Bismuthi Co. (Armour)

Glycerole of Pepsin	-	-	5 oz.
Bismuth ammonio-citrate	-	-	640 grs.
Morphine acetate	-	-	16 grs.
Dilute Acetic acid	-	-	30 mins.
Tincture of Nux vomica	-	-	4 fl. oz.
Dilute Hydrocyanic acid	-	-	1 fl. oz.
Alcohol 60%	-	-	2 oz.
Tincture of Cochineal	-	-	q.s.
* Simple Liquor	-	-	to make 2 pints

Mix the glycerole of pepsin with 4 oz. of the simple liquor,

* *Simple Liquor*.—Tincture of fresh Orange-peel 8 oz., simple syrup 2½ pints, distilled water sufficient to make 6 pints.

and carefully neutralize the mixture with a weak solution of ammonia. Dissolve the ammonio-citrate of bismuth in 20 oz. of the simple liquor, aiding solution, if acid, by neutralizing with ammonia. Mix the acetic acid, the proof spirit, and 2 oz. of the simple liquor, and dissolve the acetate of morphine in the mixture. Mix the three solutions, add the tincture of nux vomica, hydrocyanic acid, and sufficiency of simple liquor to produce 2 pints. Colour with the tincture of cochineal, and filter.

One fluid drachm equals Liq. bismuthi B.P. 1 dr. or 2 grains of ammonio-citrate of bismuth, $\frac{1}{20}$ grain of acetate of morphine, 6 minims of tincture of nux vomica, and $1\frac{1}{2}$ minims of diluted hydrocyanic acid.

Dose : $\frac{1}{2}$ to 1 fl. dr.

19. Mist. Bismuthi et Pepsin Co.

Soluble Pepsine, 1 : 3000	-	-	$\frac{1}{2}$ oz.
Morphine acetate	-	-	16 grs.
Dilute Acetic acid	-	-	q.s.
Red Bismuth mixture, conc. (No. 17)			to 40 oz.

Dose : $\frac{1}{2}$ to one drachm, which contains the equivalents of :—Liq. bismuthi, 1 dr. ; Tinct. nucis vom., 6 mins. ; Acid hydrocy. dil., $1\frac{1}{2}$ mins. ; Morph. acet., $\frac{1}{20}$ gr.

An admirable mixture in the treatment of stomachic ailments, especially when accompanied by pain. Can be prepared at about one-fourth of the price charged by most of the wholesale druggists. Tincture of cardamoms or fresh orange peel improve the mixture.

20. Mist. Bronchialis Conc.

Each 1 dr.
contains

4 grs.	Ammonium chloride	-	4 oz.
$\frac{1}{2}$ min.	Compound tincture of Camphor (conc. 1-7)	-	4 drs.
10 mins.	Syrup of Tolu	-	10 oz.
$\frac{1}{2}$ min.	Fluid extract of Ipecac.	-	4 drs.
5 mins.	Fluid extract of Liquorice	-	5 oz.
$\frac{1}{4}$ min.	Chloroform	-	$\frac{1}{4}$ oz.
	Water	-	to 60 oz.

Dose : 1 dr. diluted.

21. Mist. Buchu Co. Conc. (L.H.)

1 dr. contains

15 grs.	Potassium bicarbonate	-	15 parts
20 mins.	Tincture of Hyoscyamus	-	20 parts
2½ mins.	(Or Fluid extract of Hyoscyamus	- -	2½ parts)
10 mins.	Spirit of Chloroform	-	10 parts
	Infusion of Buchu (conc. 1-7)	- -	to 60 parts

Dose : 1 dr. diluted.

22. Mist. Cardiacæ Conc.

1 dr. contains

10 mins.	Spirit of Ether	- -	
10 mins.	Aromatic Spirit of Am- monia	- -	
10 mins.	Compound tincture of Lavender	- -	1 part
	(or Fluid Lavender Conc. 1-4 ¼ part)	-	
	Camphor water	- -	to 6 parts

Dose : 1 dr. diluted.

23. Mist. Cinchon. Ammoniata Conc.

1 dr. contains

3 grs.	Ammonium carbonate	-	1 part
7½ mins.	Fluid extract of Cinchona	-	2½ parts
	Chloroform	- -	1 part
	Water	- -	to 20 parts

Dose : 1 dr. diluted.

24. Mist. Cinchon. Acida (L.H.)

1 dr. contains

10 mins.	Dilute Nitro-hydrochloric acid	- -	1 part
	Decoction of Cinchona (conctd. 1-7)	-	to 6 parts

Dose : 1 dr. diluted.

25. Mist. Colchici et Potassæ. (S. George's)

1 dr. contains

15 mins.	Wine of Colchicum	-	1 part
30 mins.	Solution of Potash	- -	2 parts
	Pimento water	-	to 4 parts

Dose : 1 dr. diluted.

26. Mist. Copaibæ Conc. (U.C.H.)

1 dr. contains

30 mins.	Balsam of Copaiba	-	2 parts
15 mins.	Solution of Potash	-	1 part
	Cinnamon water	-	to 4 parts

Dose : 1 dr. diluted.

27. Mist. Cretæ Conc.

Conc. 1 to 4.

	Prepared Chalk	-	8 oz.
	Powdered Tragacanth	-	1 oz.
	Sugar	-	16 oz.
	Oil of Cinnamon	-	2 drs.
	Alcohol 90%	-	q.s.
	Water	-	to 64 oz.

1 oz. diluted to 4 oz. with water forms Mist. Cretæ B.P.

28. Mist. Diaphoretica Conc. (Skin)

1 dr. contains

5 mins.	Wine of Ipecacuanha	-	1 part
30 mins.	Spirit of Nitrous Ether	-	6 parts
15 mins.	Solution of Ammonium acetate (conc. 1-7)	-	3 parts
	Water	-	to 12 parts

Dose : 1 dr. diluted.

29. Mist. Diuretica Conc. (G.N.)

2 drs. contain

30 grs.	Potassium acetate	-	1½ parts
20 mins.	Tincture of Squills	-	1 part
30 mins.	Spirit of Nitrous Ether	-	1½ parts
	Infusion of Broom (conc. 1-7)	-	to 6 parts

Dose : 1 to 2 drs. diluted.

30. Mist. Emmenagogue Conc.

1 dr. contains

7½ grs.	Iron ammonio-citrate	-	1 part
7½ grs.	Ammonium bromide	-	1 part
	Decoction of Aloes (concd. 1-3)	-	2 parts
	Pimento water	-	to 8 parts

Dose : 1 dr. diluted.

31. Mist. Expectorans Conc.

2 drs. contain

5 grs.	Ammonium carbonate	1	part
10 mins.	Tincture of Squills -	2	parts
10 mins.	Wine of Ipecacuanha -	2	parts
10 mins.	Tincture of Senega -	2	parts
30 mins.	Syrup of Wild Cherry -	6	parts
$\frac{1}{2}$ min.	Chloroform -	$\frac{1}{10}$	part
	Water - - -	to 24	parts

Dose : 1 to 2 drs. diluted.

32. Mist. Febrifuga Conc. (Royal Free)

2 drs. contain

5 grs.	Potassium nitrate -	1	part
30 mins.	Spirit of Nitrous Ether -	6	parts
30 mins.	Solution of Ammonium acetate (conc. 1-7) -	6	parts
	Water - - -	to 24	parts

Dose : 2 drs. diluted.

33. Mist. Ferri Amara Conc. (U.C.H.)

1 dr. contains

30 mins.	Solution of Iron perchloride	6	parts
5 mins.	Spirit of Chloroform -	1	part
	Infusion of Quassia (conc. 1-7) -	to 12	parts

Dose : 1 dr. diluted.

34. Mist. Ferri Aperiens Conc. (U.C.H.)

1 dr. contains

2 grs.	Iron sulphate -	1	part
30 grs.	Magnesium sulphate -	15	parts
9 mins.	Dilute Sulphuric acid	$4\frac{1}{2}$	parts
	Peppermint water -	to 60	parts

Dose : 2 drs. diluted.

35. Mist. Ferri c. Nuc. Vom. Conc. (Samaritan)

1 dr. contains

10 mins.	Tincture of Nux vomica -	2	parts
5 grs.	Iron ammonio-citrate -	1	part
5 grs.	Ammonium carbonate -	1	part
	Camphor water -	to 12	parts

Dose : 1 dr. diluted.

36. Mist. Ferri c. Strych. Conc. (Westminster)

1 dr. contains

10 mins.	Solution of Iron perchloride	2 parts
5 mins.	Solution of Strychnine	- 1 part
10 mins.	Spirit of Chloroform	- 2 parts
	Water	- to 12 parts

Dose : 1 dr. diluted.

37. Mist. Ferri et Quin. et Strych. Conc.

1 dr. contains

10 mins.	Solution of Iron perchloride	10 oz.
1 gr.	Quinine sulphate	- - 1 oz.
5 mins.	Solution of Strychnine	- 5 oz.
5 mins.	Dilute Phosphoric acid	- 5 oz.
	Chloroform	- - 90 mins
	Water	- - to 60 oz.

Dose : 1 dr. diluted.

38. Mist. Ferri c. Pot. Chlor. Conc.

1 dr. contains

5 grs.	Potassium chlorate	- - 2½ parts
10 mins.	Solution of Iron perchloride	5 parts
15 mins.	Glycerin	- - 7½ parts
	Hot water	- - to 30 parts

Dose : 1 dr. diluted.

39. Mist. Gent. c. Rheo (L.H.)

Sliced Gentian	- - -	90 grs.
Bitter Orange peel	- - -	30 grs.
Rhubarb	- - -	20 grs.
Ginger	- - -	15 grs.
Hot water	- - -	to 20 oz.

Infuse and strain. Dose : 1 to 2 oz.

40. Mist. Hepatica Conc.

Glycerole of Pepsin (P.D. & Co.)	5 oz.
Bismuth ammonio-citrate	- - 640 grs.
Fluid extract of Cascara Sagrada	10 fl. oz.
Fluid extract of Liquorice	- - 8 oz.
Fluid extract of Ginger	- - 1 oz.
Podophyllin resin	- - 32 grs.
Aromatic Spirit of Ammonia	- - 2 oz.
Simple Syrup	- - to 40 oz.

Dose : ½ to 1 dr. diluted, which contains the equivalents

of : Liq. bismuth. B.P. 1 dr., podophyll. gr. $\frac{1}{16}$, cascara 15 mins. A mixture specially useful in the "seediness" of city men, whose livers, owing to overwork and worry, are not acting properly.

41. Mist. Hepat. et Dysp. Conc.

2 drs. contain

15 mins.	Glycerole of Pepsin (P.D. & Co.)	- - - -	$2\frac{1}{2}$ oz.
3 mins.	Solution of Strychnine	-	4 drs.
$7\frac{1}{2}$ mins.	Dilute Nitro-hydrochloric acid	- - - -	10 drs
$\frac{3}{5}$ min.	Fluid extract of bitter Orange	- - -	48 mins.
	Glycerin	- - -	4 oz.
	Chloroform water	-	to 20 oz.

Dose : 2 drs. diluted.

42. Mist. Hydrarg. Iod. Conc. (G.N.)

1 dr. contains

$\frac{1}{16}$ gr.	Mercury perchloride	- -	10 grs.
3 grs.	Potassium iodide	- -	1 oz.
	Infusion of Quassia (conctd. 1-7)	- - -	to 20 oz.

Dose : 1 dr. diluted.

43. Mist. Hydrobrom. Conc. (Milner Fothergill)

1 dr. contains

15 mins.	Dilute Hydrobromic acid	-	3 parts
10 mins.	Spirit of Chloroform	-	2 parts
30 mins.	Syrup of Squills	- -	6 parts
	Water	- -	to 12 parts

Dose : 1 dr. diluted.

44. Mist. Neuralglea Conc.

1 dr. contains

8 mins.	Tincture of Gelsemium	-	1 part
1 gr.	Quinine sulphate	- -	$\frac{1}{8}$ part
16 mins.	Dilute Hydrobromic acid	-	2 parts
	Chloroform water	-	to $7\frac{1}{2}$ parts

Dose : 1 dr. diluted.

45. Mist. Pot. Brom. Conc. (Royal Chest)

1 dr. contains

10 grs.	Potassium bromide	-	-	1 part
10 mins.	Ammoniated tincture of			
	Valerian	-	-	1 part
	Camphor water	-		to 6 parts
Dose : 1 dr. diluted.				

46. Mist. Prun. Virg. Conc.

Fluid extract of Wild Cherry	-	7½ oz.
Liquid extract of Ipecac. (B.P.)	-	5 drs.
Oil of Lemons	- - -	2 drs.
Solution of Carmine	-	q.s.
Golden Syrup	- - -	20 oz.
Chloroform	- - -	2 drs.
Water	- - - -	to 80 oz.

Dose : 1 dr. diluted.

47. Mist. Prun. Virg. c. Morph. Conc.

Morphine acetate	- - -	16 grs.
Wild Cherry mixture (No. 46)		to 40 oz.

Dose : 1 dr. diluted = $\frac{1}{10}$ gr. morphine.

48. Mist. Quininæ Conc.

1 dr. contains

½ min.	Chloroform	- - -	100 mins.
3 grs.	Quinine sulphate	- -	480 grs.
	Dilute Sulphuric acid	-	q.s.
	Compound tincture of Car-		
	damoms (conctd. 1-3)		to 20 oz.

Dose : 20 mins. = 1 gr. quinine. Resembles the Mist. quininæ of St. Thomas's. Elegant, easy to dispense.

49. Mist. Rhei Ammoniata c. Sod. (Royal Chest)

2 drs. contain

4 grs.	Rhubarb powder	-	-	1 part
3 grs.	Ammonium carbonate	-	-	¾ part
10 grs.	Sodium bicarbonate	-	-	2½ parts
	Peppermint water	-		to 30 parts

Dose : 2 drs. diluted. Fluid ext. of rhubarb makes a more elegant mixture.

50. Mist. Salina Co. Conc. (Samaritan)

2 drs. contain

15 mins.	Solution of Ammonium acetate	- - -	1 part
30 mins.	Oxymel of Squills	- - -	2 parts
7½ mins.	Wine of Ipecacuanha	- - -	½ part
15 mins.	Compound tincture of Camphor (or ⅓ part conc. 1-7)	- - -	1 part
30 mins.	Spirit of Nitrous Ether	- - -	2 parts
	Water	- - -	to 8 parts

Dose : 2 drs. diluted.

51. Mist. Rheumatic. Conc.

1 dr. contains

7½ grs.	Sodium salicylate	- - -	5 parts
7½ grs.	Potassium bicarbonate	- - -	5 parts
3 grs.	Ammonium carbonate	- - -	2 parts
6 mins.	Fluid extract of Liquorice	- - -	4 parts
	Chloroform water	- - -	to 40 parts

Dose : 1 dr. diluted.

52. Mist. Seneg. Ammoniata

1 dr. contains

3 grs.	Ammonium carbonate	- - -	1 part
	Infusion of Senega (conc. 1-7)	- - -	to 20 parts

Dose : 1 dr. diluted.

53. Mist. Terebene (C.T.H.)

1 dr. contains

5 mins.	Pure Terebene	- - -	1 part
5 mins.	Tincture of Quillaia	- - -	1 part
	Chloroform water	- - -	to 12 parts

Dose : 1 dr. diluted.

54. Mist. Tussis Rub. Conc.

1 dr. contains

3 mins.	Dilute Hydrobromic acid	- - -	3 oz.
2 mins.	Solution of Morphine acetate	- - -	2 oz.
¼ min.	Dilute Hydrocyanic acid	- - -	¼ oz.
2 mins.	Spirit of Chloroform	- - -	2 oz.
4 mins.	Wine of Ipecacuanha	- - -	4 oz.
10 mins.	Syrup of red Poppies	- - -	10 oz.
10 mins.	Chloroform water	- - -	10 oz.
	Glycerin	- - -	to 60 oz

Dose : 1 or 2 drs. diluted.

CONCENTRATED MIXTURES FOR CHILDREN.

55. *Mist. Carminativa Infant. Conc.*Each $\frac{1}{2}$ oz.
contains

20 grs.	Magnesium carbonate	3 oz. 287 grs.
1 min.	Oil of Dill - - -	80 mins.
	Alcohol - - -	q.s. to dissolve
1 dr.	Golden Syrup or Glycerin	10 oz.
5 mins.	(or elixir of Saccharin	400 mins.)
	Water - - -	to 40 oz.

$\frac{1}{2}$ fl. oz. diluted with water up to 2 oz. forms a mixture containing the amounts as represented in the left hand margin. Dose of this according to age.

56. *Mist. Diarrhœa Infant. Conc.*Each $\frac{1}{2}$ oz.
contains

8 grs.	Salol - - -	5 drs. 20 grs.
8 grs.	Compound Tragacanth powder - - -	5 drs. 20 grs.
5 mins.	Elixir of Saccharin (B.P.C.) - - -	200 mins.
32 grs.	Bismuth salicylate - - -	21 drs. 20 grs.
1 min.	Oil of Dill - - -	40 mins.
	Alcohol - - -	q.s. to dissolve
	Water - - -	to 20 oz.

$\frac{1}{2}$ fl. oz. diluted with water up to 2 oz. forms a mixture containing the amounts represented in the left hand margin, and the dose of which is 1 dr. for a child 1 year old.

57. *Mist. Febrifug. Infant.*Each $\frac{1}{2}$ oz.
contains

80 mins.	Solution of Ammonium acetate - - -	16 oz.
40 mins.	Wine of Ipecacuanha - - -	8 oz.
1 $\frac{1}{2}$ drs.	Syrup of Tolu - - -	18 oz.
5 mins.	Tincture of Cochineal - - -	4 drs.
	Water - - -	to 48 oz.

$\frac{1}{2}$ fl. oz. diluted with water up to 2 oz. forms a mixture containing the ingredients represented in the left hand margin, the dose of which is 1 dr. for a child of one year.

58. Mist. Pertuss. Conc. No. 1

1 dr. contains

2 grs.	Phenazone	-	-	-	1 oz.
5 mins.	Glycerin	-	-	-	2½ oz.
5 mins.	Wine of Ipecacuanha	-	-	-	2½ oz.
15 mins.	Syrup of Tolu	-	-	-	7½ oz.
	Water	-	-	-	to 30 oz.

Dose : 1 to 2 drs. diluted.

59. Mist. Pertuss. Conc. No. 2

1 dr. contains

3 grs.	Ammonium bromide	-	-	1½ oz.
1 min.	Tincture of Belladonna	-	-	½ oz.
1½ gr.	Pure Carbolic acid	-	-	20 grs.
5 mins.	Syrup of Tolu	-	-	2½ oz.
10 mins.	Glycerin	-	-	5 oz.
	Chloroform water	-	-	to 30 oz.

Dose : 1 dr. diluted.

60. Mist. Sedativa Infant Conc.

1 dr. contains

1 gr.	Ammonium bromide	-	½ oz.
2 mins.	Tincture of Hyoscyamus	-	1 oz.
	(or Fluid Ext. Hyos. 1 dr.)		
5 mins.	Syrup of Red Poppies	-	2½ oz.
5 mins.	Glycerin	-	2½ oz.
	Chloroform Water	-	to 30 oz.

Dose : 1 dr. diluted with aromatic water.

61. Mist. Tussis Conc. (C. and D.)

1 dr. contains

4½ mins.	Wine of Ipecacuanha	-	3 oz.
	(or Fluid extract of Ipecac.	72 mins.)	
¼ min.	Chloroform	-	80 mins.
18 mins.	Liquid Glucose	-	12 oz.
¾ min.	Essence of Raspberries	-	½ oz.
	Eosin, dissolved in spirit	-	q.s.
	Water	-	to 40 oz.

Dose : 1 to 2 drs. A palatable cough mixture for children, attractive in colour, effective, and very economical.

CONCENTRATED MIXTURES FROM LIQUID AND FLUID EXTRACTS.

(Elegant, convenient, and economical.)

62. Mist. Febrifug. Conc.

Potassium nitrate	-	-	-	3½ oz.
Compound tincture of Camphor				
(conctd. 1-8)	-	-	-	1 oz. 6 drs.
Liquid extract of Ipecac, B.P.	-			3 drs 36 m.
Chloroform	-	-	-	2 drs.
Water	-	-	-	to 80 oz.
				= ½ gal.

Dose : 1 to 2 drs. diluted.

63. Mist. Dyspeptic Conc.

Bismuth ammonio-citrate	-	-	640 grs
Solution of Ammonia, B.P.	-	-	q.s.
Glyccerole of Pepsin	-	-	5 oz.
Solution of Carmine	-	-	q.s.
Liquid extract of Nux Vomica B.P.			
			1 oz. 2 drs. 40 mins.
Compound tincture of Cardamoms			
(conctd. 1-3)	-	-	2½ oz.
Morphine acetate	-	-	32 grs.
Dilute Hydrocyanic acid	-	-	2 fl. oz.
Chloroform	-	-	2 drs.
Water	-	-	to 80 oz.

Dose : ½ to 1 dr. diluted, which contains the equivalents of : Liq. bismuth. B.P. 1 dr., Tinct. nucis vom. B.P. 6 mins., prussic acid 1½ mins., morphine acet. gr. ½. An admirable remedy in all gastric disorders accompanied by pain after food.

64. Mist. Hepatica Conc.

Liquid extract of Nux Vomica, B.P.	5 drs. 20 mins.
Fluid extract of Ginger	- - - 3½ drs.
Compound tincture of Gentian,	
(conctd. 1-6)	- - - 1 oz. 2 drs.
Resin of Podophyllin	- - - 64 grs.
Solution of Ammonia, B.P.	- - - 1½ oz.
Chloroform	- - - 2 drs.
Water	- - - to 80 oz.

Dose : 1 dr. diluted. = Tinct. nucis vom. 3 mins., res. podophyll. ½ gr.

65. Mist. Tussis Conc.

Morphine acetate	-	-	-	32	grs.
Fluid extract of Wild Cherry	-	-	-	7½	oz.
Liquid extract of Ipecac. B.P.	-	-	-	5	drs.
Chloroform	-	-	-	2	drs.
Commercial Liquorice	-	-	-	2	oz.
Golden Syrup	-	-	-	40	oz.
Water	-	-	-	to 80	oz.

Dose : ½ to 1 dr. (each drachm contains ½ gr. morphine)

66. Mist. Tonica Conc.

Dilute Nitro-hydrochloric acid	-	-	-	13½	oz
Liquid extract of Nux Vomica, B.P.	-	-	-	10	drs. 40 mins.
Compound tincture of Gentian.	-	-	-	-	-
(conctd. 1-6)	-	-	-	4	oz.
Chloroform	-	-	-	2	drs.
Water	-	-	-	to 80	oz.

Dose : 1 dr. diluted.

67. Mist. pro Diarrhœa Conc.

Fluid Opium (conc. 1-6)	-	-	-	2	oz.
Fl. Catechu pro. tinct. (conc. 1-4)	-	-	-	10	oz
Solution of Ammonia. B.P.	-	-	-	2	oz
Soluble Saccharin	-	-	-	40	grs.
Chloroform	-	-	-	2	drs
Water	-	-	-	to 80	oz

Dose : 1 dr. diluted.

MUC. TRAGACANTH.

Alcohol, 90 per cent.	-	-	-	4	drs
Put in a two pint dry bottle and add—	-	-	-	-	-
Powdered Tragacanth	-	-	-	2	drs
Shake till evenly moistened, and add—	-	-	-	-	-
Distilled water	-	-	-	to 20	oz.

(Martindale.)

A little glycerin facilitates the making.

NEBULÆ—Sprays.

(Are used by means of an atomizer. Should be filtered.)

No. 1—

Menthol	-	-	-	-	30 grs.
Camphor	-	-	-	-	30 grs.
Oil of Cassia or Cinnamon	-	-	-	-	5 mins.
Liquid Paraffin	-	-	-	-	to 1 oz.

In "cold in the head."

No. 2—

Eucalyptol	-	-	-	-	5 mins.
Oil of Wintergreen	-	-	-	-	5 mins.
Menthol	-	-	-	-	10 grs.
Liquid Paraffin	-	-	-	-	to 1 oz.

In catarrh of nose and throat, especially dry catarrh.

No. 3—

Cocaine (alkaloid)	-	-	-	-	2 grs.
Oil of Cassia or Cinnamon	-	-	-	-	5 mins.
Menthol	-	-	-	-	15 grs.
Liquid Paraffin	-	-	-	-	to 1 oz.

In acute congestion of nose, throat, and middle ear.

No. 4—

Beechwood Creosote	-	-	-	-	1 dr.
Oil of Cassia	-	-	-	-	20 mins.
Eucalyptol	-	-	-	-	20 mins.
Liquid Paraffin	-	-	-	-	to 4 oz.

In incipient phthisis.

No. 5—

Iodine crystals	-	-	-	-	8 grs.
Menthol	-	-	-	-	10 grs.
Oil of Firwood	-	-	-	-	15 mins.
Beechwood Creosote	-	-	-	-	15 mins.
Eucalyptol	-	-	-	-	15 mins.
Oil of Cassia	-	-	-	-	5 mins.
Liquid Paraffin	-	-	-	-	to 1 oz.

In pulmonary and laryngeal tubercle and catarrh involving middle ear, with impairment of hearing and tinnitus.

No. 6—

Wine of Ipecacuanha	-	-	-	1 oz.
Oil of Cassia	-	-	-	5 mins.
Glycerin of tannin	-	-	-	to 3 oz.

In subacute and chronic laryngitis and pharyngitis.

No. 7—

Sol. Adrenalin Chloride (Taka-				
mine) 1 : 1000	-	-	-	1 part
Normal Saline solution	-	-	-	5 parts

Used with a pocket atomizer (the "Glaseptic" is cheap and very portable) is almost a specific in Hay fever, but should be used with caution.

No. 8—

Cyllin inhalant (Jeyes')

Use with a nebulizer several times daily in Phthisis. Has eight times the bactericidal power of carbolic acid without its toxicity.

PIGMENTA—Paints.

1. Pig. Acidi Borici

Powdered Boric acid	-	-	-	1 part
Glycerin	-	-	-	3 parts

Dissolve. Better than the ancient honey and borax in thrush and aphthæ.

2. Pig. Ferri Perchlor.

Strong solution of Iron perchloride				1 part
Glycerin	-	-	-	3 parts

3. Pig. Iodi (Bristol General)

Iodine	-	-	-	-	40 grs.
Spirit	-	-	-	-	1 oz.

4. ***Pig. Iodi Etherium

Iodine	-	-	-	-	$\frac{1}{2}$ oz.
Spirit	-	-	-	-	3 oz.
Methylated Ether	-	-	-	-	to 6 oz.

Forms an inexpensive, quick drying paint, and thus economizes time. The ether, too, by removing fatty matters, aids absorption.

PULVERES—Powders.**Powders for Children (C. and D.)**

Calomel	-	-	-	-	144 grs.
Carminc	-	-	-	-	2 grs.
Powdered sugar	-	-	-	-	1 oz

Mix and sift.

Dose : 6 to 9 months = 2 grs. = $\frac{2}{3}$ gr. calomel.

9 to 12 months = 3 grs. = 1 gr. „

1 to 10 years = 4 grs. = $1\frac{1}{3}$ gr. „

Sesquioxide of iron may be used for colouring.

Pulv. Amyli Comp.

Powdered Boric acid	-	-	-	1 part
„ Zinc oxide	-	-	-	4 parts
„ Rice Starch	-	-	-	4 parts

Mix.

A dusting powder for skin diseases, ulcers, infants, etc.

Pulv. Anti-Asthmaticus

Powdered Lobelia, Stramonium,
Black Tea, and Nitrate of Potash,
of each 2 oz.

Powdered Anise and Fennel, of each 2 drs.
(*Sir Morell Mackenzie.*)

Resembles Himrod's Asthma Powder.

Pulv. Acetanilide Co. (N.F.)

Acetanilide, powdered	-	-	50 grs.
Caffeine	-	-	20 grs.
Tartaric Acid	-	-	30 grs.
Sodium bicarbonate	-	-	45 grs.

Dose : 5 to 10 grs. Resembles Antikamnia.

Pulv. Ferri Carb. (Syn. Blaud's Powder)

Dried Iron sulphate	-	-	8 parts
„ Sodium carbonate	-	-	5 parts

Dose : 2 to 6 grs. in water. It has the advantage that carbonate of iron is formed only at the moment of administration.

Pulv. Iodoformi

Powdered Iodoform	-	-	-
Powdered Boric acid,	equal	parts	by weight.

Pulv. Iodoformi Co. (N.F.) (*Deodorized Iodoform*)

Iodoform	-	-	-	-	4 drs.
Naphthalin	-	-	-	-	10 drs.
Boric acid	-	-	-	-	5 drs.
Oil of Bergamot	-	-	-	-	30 mins.

Mix.

Pulv. pro Mist. Cretæ.

Prepared Chalk	-	-	-	-	8 oz.
Powdered Gum Acacia	-	-	-	-	8 oz.
Oil of Cinnamon	-	-	-	-	2 drs.
Powdered white sugar	-	-	-	-	5½ oz.

Mix.

40 grs. with 1 oz. water forms Mist. Cretæ. B.P.

Pulv. Pepsini Co.

Saccharated Pepsin (from Pepsin

Aseptic)	-	-	-	-	1½ drs.
Lactic acid	-	-	-	-	10 mins.
Hydrochloric acid	-	-	-	-	20 mins.
Pancreatin	-	-	-	-	1½ drs.
Taka-Diastase	-	-	-	-	10 grs.
Sugar of Milk	-	-	-	-	6½ drs.

Mix.

Resembles the widely-advertised proprietary, Lacto-peptin.

Pulv. Phenacetin Co.

Powdered Phenacetin	-	-	-	4 parts
Caffeine	-	-	-	1 part

Dose : 5 to 20 grs. Mix.

****Pulv. Rosæ Co.** (*Martindale*)

Powdered Gum Acacia	-	-	145 grs.
Powdered Sugar	-	-	840 grs.
Solution of Carmine	-	-	13 mins.
Oil of Roses (otto)	-	-	-
Chloroform	-	-	āā 1 min.

Mix.

An agreeable diluent for powders such as grey powder, calomel, santonin, and jalapin.

Pulv. Santonini Co.

Santonin	-	-	-	-	240 grs.
Saccharin	-	-	-	-	2 grs.
Powdered Scammony	-	-	-	-	180 grs.
Sodium bicarbonate	-	-	-	-	60 grs.
Sugar of Milk	-	-	-	-	240 grs.

Dose : 6 months to 2 years = 2 grs.

2 to 5 years = 1 gr. for each year

5 to 8 years = 6 grs.

8 to 12 years = $7\frac{1}{2}$ grs.

Note.—Not to be given under 6 months.

QUICK AND ACCURATE METHOD OF DISPENSING POWDERS.

Powders take up by far the most time in dispensing, and hence are avoided as far as possible in the general practitioner's surgery. Nowadays compressed tablets have largely taken the place of the large, bulky powders which formerly used to be sent out. Dispensed in a pill box, they are portable and easily swallowed, or they may be sent out with directions to crush the tablet before taking. Many practitioners get powders to their own formulæ made up by the wholesale druggist, but such powders cannot be bought, whatever their composition, at much less than 3s. 6d. a gross. Nowadays, with tablet machines turning out 600 per minute, it is infinitely cheaper and more in accordance with the demands of the twentieth century public to use tablets as far as possible in preference to bulky powders. Any formula almost can be had, together with printed labels suitable for them.

But there is a class of patients, namely, young children and infants, for whom powders must sometimes be prescribed. They are most quickly and accurately dispensed by employing tablet-triturations. Many of the wholesale druggists in this country now make them. The triturate, whole, or divided into two or four parts by cutting as required, is placed on the powder paper and quickly crushed with a palette knife into a fine powder. The average cost of calomel, grey powder, etc., triturates is 6d. per 100.

Another way is simply to dispense the tablets in their "native state" in a pill box, and give directions to crush them before administering. For grey powders, calomel, santonin, etc., this method saves much time and irksome labour, and ensures greater accuracy in dosage.

Chocolate Triturates.—A class of triturates containing chocolate instead of sugar of milk has recently been introduced in this country under the name of *chocollæ*, *cocoids*, etc. They may be used for infants' and children's powders in the same way as tablet triturates, and can be obtained to any formula, and flavoured with essential oil or not, just as desired. They are very friable and easily powdered.

Aromatic Tablets.—Another class of medicines that have come much into use of recent years, designed more especially for children, are aromatic tablets or *cachous*. They have sugar as a basis, in which the medicament is intimately incorporated, are generally coloured in an attractive manner, usually pink or *heliotrope*, and may be simply round discs, or oval, or square, according to the particular drug house that makes them. Vanilla and other flavourings, too, tend to make them particularly easy of administration to children. Calomel, grey powder, santonin, etc., can be agreeably disguised in this way.

Pink Granules are another class of medicine specially designed for children, although they can be used for adults in cases where it is desired to give small and frequently-repeated doses of potent remedies. They are more popular on the other side of the Atlantic than in this country. Their distinctive pink colour is an attraction to the little patients, they are easily swallowed, and, being sugar-coated, have no unpleasant taste.

Tincture Tablets.—These are made by triturating liquid extracts with sugar of milk, and of course contain no alcohol.

Formulae of Chocollæ, and Tablet Triturates.*For quickly dispensing children's powders.*

Calomel	$\frac{1}{100}$ gr.,	$\frac{1}{10}$ gr.,	$\frac{1}{4}$ gr.,	$\frac{1}{2}$ gr.,	1 gr.,	2 grs.
Calomel	-	-	-	-	-	$\left\{ \frac{1}{4} \text{ gr.} \right.$
Dover's powder	-	-	-	-	-	$\left\{ 1 \text{ gr.} \right.$
Calomel	-	-	-	-	-	$\left\{ \frac{1}{8} \text{ gr.} \right.$
Dovers' powder	-	-	-	-	-	$\left\{ 1 \text{ gr.} \right.$
Grey powder	$\frac{1}{2}$ gr.,	1 gr.,	2 grs.,	3	grs.	
.. .. and Bismuth carbonate	$\frac{1}{2}$ gr.					
Grey powder	-	-	-	-	-	$\left\{ \frac{1}{2} \text{ gr.} \right.$
Sodium bicarbonate	-	-	-	-	-	$\left\{ \frac{1}{2} \text{ gr.} \right.$
Rhubarb	-	-	-	-	-	$\left\{ \frac{1}{2} \text{ gr.} \right.$
Grey powder	-	-	-	-	-	$\left\{ 1 \text{ gr.} \right.$
Dover's powder	-	-	-	-	-	$\left\{ 1 \text{ gr.} \right.$
Santonin	-	-	$\frac{1}{2}$ gr.,	1 gr.,	2	grs.

Numerous other formulae may be had.

SOLUTIONS.**CONCENTRATED SOLUTIONS FOR DISPENSING.**

These solutions greatly economize time and labour in dispensing, and form brighter and more elegant mixtures than those resulting from the use of the solid salt. They may be made either with plain or boiled water. When not used up quickly as in small private practice, they are best made with Aq. chlor. Iron solutions, such as Fer. et Ammon. cit., keep perfectly if made with chloroform water. Generally speaking, the more concentrated they are prepared the better they keep. In some practices Alum, Boric acid, Pot. chlor., and Sod. bicarb. are kept in saturated solution. They are easy to prepare, although not quite accurate, as the quantity of the salt taken up varies with the temperature. In frosty weather a small quantity of glycerin will prevent their freezing. Ferrous sulph. keeps best in acid solution.

1. Sol. Aluminis 1 in 12

Alum	-	-	-	-	40 grs.
Water	-	-	-	-	to 1 oz.

2. Sol. Ammon. Brom. 1 in 4

Ammonium bromide	-	-	-	-	2 drs.
Water	-	-	-	-	to 1 oz.

3. **Sol. Ammon. Carb.** 1 in 4
 Ammonium carbonate - - - 2 drs.
 Water - - - to 1 oz.
4. **Sol. Ammon. Chlor.** 1 in 4
 Ammonium chloride - - - 2 drs.
 Water - - - to 1 oz.
5. **Sol. Ferri et Ammon. Cit.** 1 in 4
 Iron and Ammonium citrate - 2 drs.
 Chloroform water - - - to 1 oz.
6. **Sol. Mag. Sulph.** 1 in 2
 Magnesium sulphate - - - 4 drs.
 Water - - - to 1 oz.
7. **Sol. Pot. Acet.** 1 in 2
 Potassium acetate - - - 4 drs.
 Water - - - to 1 oz.
8. **Sol. Pot. Bicarb.** 1 in 4
 Potassium bicarbonate - - 2 drs.
 Water - - - to 1 oz.
9. **Sol. Pot. Brom.** 1 in 4
 Potassium bromide - - - 2 drs.
 Water - - - to 1 oz.
10. **Sol. Pot. Chlor.** 1 in 16
 Potassium chlorate - - - $\frac{1}{2}$ dr.
 Water - - - to 1 oz.
11. **Sol. Pot. Iod.** 1 in 2
 Potassium iodide - - - 4 drs.
 Water - - - to 1 oz.
12. **Sol. Pot. Nitr.** 1 in 8
 Potassium nitrate - - - 1 dr.
 Water - - - to 1 oz.
13. **Sol. Quin. Sulph.** 1 in 15
 Quinine sulphate - - - 32 grs.
 Dilute Sulphuric acid - - - q.s.
 Chloroform water - - - to 1 oz.
14. **Sol. Sodii Bicarb.** 1 in 16
 Sodium bicarbonate - - - 1 dr.
 Water - - - to 2 oz.

15. Sol. Sodii Salicyl. 1 in 2

Sodium salicylate	-	-	-	-	4 drs.
Water	-	-	-	-	to 1 oz.

16. Sol. Sodii Sulph. 1 in 4

Sodium sulphate	-	-	-	-	2 drs.
Water	-	-	-	-	to 1 oz.

SOLUTIONS (1 in 1).

The following solutions can be prepared 1 in 1, and are very convenient for rapid dispensing. The scale preparations, Chloral hydrate, and Potassium acetate, are quite easily dispensed in this way.

Sol. Calcium chloride	-	-	60 grs. in 1 dr.
„ Chloral hydrate	-	-	„ „
„ Iron and Ammonium citrate	-	-	„ „
„ Iron and Quinine citrate	-	-	„ „
„ Potassium acetate	-	-	„ „
„ Potassium citrate	-	-	„ „
„ Potassium iodide	-	-	„ „

1 in 6 = 80 grs. in 1 oz.	=	$\frac{1}{2}$ lb. in 43 $\frac{3}{4}$ fl. oz. water.
1 in 2 = 240 grs. in „	=	$\frac{1}{2}$ lb. in 14 oz. 4 drs. 40 mins. water.

TEST SOLUTIONS.**Sol. Esbach (Test)**

Picric acid	-	-	-	-	15 grs.
Citric acid	-	-	-	-	30 grs.
Distilled water	-	-	-	-	to 3 $\frac{1}{2}$ drs.

Sol. Fehling (Test, Germ. Hosp. Pharm.)

Copper sulphate	-	-	-	-	181 grs.
Distilled water	-	-	-	-	to 6 oz.

Dissolve and keep separate.

Sodium and Potassium tartrate	-	-	-	-	728 grs.
Caustic Soda	-	-	-	-	360 grs.
Distilled water	-	-	-	-	to 6 oz.

Dissolve and keep separate.

When required for use, mix equal volumes of the two solutions. 10 cc. will be decolorized and reduced by 0.05 gram diabetic sugar.—(*German Hosp. Pharm.*)

INSOLUBLE POWDERS IN WATER.

Many solids in constant use can be made convenient for dispensing by making them up in the same way as solutions. They should be kept in bottles never more than three-quarters full, and briskly shaken before pouring out. The following are the most useful :—

1.	Magnesium carbonate	-	1 dr. in 1 oz.
2.	Bismuth subnit.	-
3.	„ carb.	-
4.	Calamine	-
5.	Prepared Chalk	-
6.	Quinine sulphate	-	32 grs. in 1 oz.
7.	Zinc oxide	-	1 dr. in 1 oz.

This method is, perhaps, not pharmaceutically good, but it is, nevertheless, one favoured by many medical men and chemists.

SPIRITS.**Spt. Ammon. Aromat. (London)**

Ammonium carbonate	-	-	3/4 oz.
Strong solution of Ammonia	-	-	2 oz.
Oil of Lemons	-	-	1 dr.
Volatile oil of Nutmeg	-	-	30 mins.
Alcohol 90%	-	-	2 1/2 pints
Distilled water	-	-	to 3 1/2 pints

Mix.

Note.—If preferred the spirit can be greatly reduced. Same dose and strength as Spt. Amm. Ar. B.P., but it is more economical, as it is not made by distillation.

Spt. Benzo-Thymol Co.

Benzoic acid	-	-	1 oz. 32 grs.
Borax	-	-	1 oz. 32 grs.
Boric acid	-	-	2 oz. 64 grs.
Distilled water	-	-	48 oz.

Dissolve with the aid of heat and add

Thymol	-	-	160 grs.
Alcohol, 90%	-	-	24 oz.
Eucalyptol	-	-	30 mins.
Oil of Thyme	-	-	5 mins.
Oil of Wintergreen	-	-	30 mins.
Oil of Peppermint	-	-	15 mins.

Add distilled water to one gallon, stand for 24 hours,

and pass through a double filter sprinkled with fuller's earth.

An economical substitute for the various preparations, *Euthymol*, etc., made by the manufacturing chemist.

Spt. Eth. Nitrosi.

The effervescence which takes place on adding sweet spirit of nitre to aqueous mixtures is due to the escape of the ethyl nitrite, and on testing such a mixture after the lapse of twenty-four hours it will be found almost destitute of the nitrous radicle. The spirit kept under ordinary conditions in a stoppered bottle rapidly loses strength until its medicinal value becomes almost *nil*. In spite of this fact, thousands of pounds are every year thrown away by doctors and public alike on what is perhaps the most worthless preparation in the B.P. Hardly a week passes but its want of stability leads to the appearance of some unwary retail chemist before the magistrates. The concentrated preparations 1 to 4 and 1 to 8 are better.

SYRUPI—Syrups.

Syrupus B.P.*

Sugar	-	-	-	-	-	10 lbs.
Water	-	-	-	-	-	4 pints

Syr. Aromaticus

Fluid extract of bitter Orange	-	-	-	-	$\frac{1}{2}$ oz.
Cinnamon water	-	-	-	-	5 oz.
Simple syrup	-	-	-	-	to 20 oz.

Syr. Aurant.

Fluid extract of bitter Orange	-	-	-	-	$\frac{1}{2}$ oz.
Simple Syrup	-	-	-	-	to 40 oz.

Syr. Case. Sagrada

Liquid extract of Cascara	-	-	-	-	8 oz.
Fluid extract of bitter Orange	-	-	-	-	96 mins.
Alcohol 90%	-	-	-	-	1 oz.
Cinnamon water	-	-	-	-	3 oz.
Simple Syrup	-	-	-	-	to 20 oz.

* It is the custom to make syrup in some practices by putting sugar in a $\frac{1}{2}$ gallon wide-mouthed bottle, adding water and stirring with a wood rod. The syrup is decanted into a stock bottle, fresh sugar and water being added.

Syr. Camph. Co. (Bristol Inf.)

Benzoic acid	-	-	-	-	3 drs.
Glacial Acetic acid	-	-	-	3 oz.	5 drs. 20 mins.
Vinegar of Squills					
Vinegar of Ipecac.	-			of each	2 pints
Oil of Anise	-	-	-	-	2 drs.
Camphor	-	-	-	-	2 drs.
Tincture of Opium	-	-	-	10 oz.	5 drs. 20 mins.
White Sugar	-	-	-	-	28 lbs.
Burnt Sugar	-	-	-	-	9.8 lbs.
Water	-	-	-	-	to 4 gallons

Dose : 1 dr. = 1 min. Tinct. Opii. It is preferable to use additional spirit (say about $\frac{1}{2}$ pint) to prepare this syrup expeditiously.

****Syr. Limonis** (St. George's)

Oil of Lemons	-	-	-	-	$\frac{1}{4}$ part
Alcohol 90%	-	-	-	-	5 parts
Simple Syrup	-	-	-	-	to 60 parts

Syr. Opii Bristoliensis

Opium	-	-	-	-	4 oz.
Crude Sugar	-	-	-	-	1 cwt.
Water	-	-	-	-	to 12 gallons

Infuse the opium in a gallon of boiling water for an hour, strain, add the sugar and water up to 12 gallons. Each oz. = 1 gr. opium.

Syr. Prun. Virg.

Fluid extract of Wild Cherry	-	-	-	-	3 oz.
Glycerin	-	-	-	-	$1\frac{1}{4}$ oz.
Sugar	-	-	-	-	15 oz.
Water	-	-	-	-	to 20 oz.

Syr. Rheados (St. Bart's)

Dried red Poppy petals	-	-	-	-	13 oz.
Golden Syrup	-	-	-	-	$5\frac{1}{4}$ lbs.
Boiling water	-	-	-	-	$5\frac{1}{2}$ pints

Infuse petals for 12 hours, strain and add the syrup. Syr. papaveris (St. Bart's) is made in the same way.

Syr. Rhei

Fluid Rhubarb for syrup (P. D. & Co.)					2 fl. oz.
Simple syrup	-	-	-	-	to 20 oz.

Syr. Scillæ B.P.

Vinegar of Squills	-	-	-	-	20 oz.
Sugar	-	-	-	-	38 oz.

Syr. Tolu. B.P.

Fluid Tolu for syrup (P.D. & Co.)	-	10 fl. oz.
Sugar	- - - - -	28 oz.
Distilled water	- - -	to 3 lbs.

****Syr. Tolu. (Squire)**

Balsam of Tolu	- - - - -	1 $\frac{1}{4}$
Alcohol 90%	- - - - -	1 $\frac{1}{4}$

Dissolve and add

Simple Syrup	- - - - -	34
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Shake and filter. Easier prepared than B.P. syrup, and has a better flavour.—(*Squire's Companion to the B.P.*)

Syr. Zingiberis

Fluid extract of Ginger	- - -	$\frac{1}{2}$ oz.
Simple Syrup	- - -	to 20 oz.

TABELLÆ—Compressed Tablets.

Compressed tablets were first made in England many years ago, but it is to American chemists that we owe their introduction on a commercial scale. They offer to the busy medical man who dispenses his own drugs advantages over mixtures, pills, powders, and lozenges, in the extreme ease with which they may be dispensed, and the great accuracy of the dosage. If bought in bulk by weight or by the 1000, they are also more economical than mixtures, pills, or powders. The machines by which they are manufactured have now been brought to a high pitch of excellence. They work automatically by an electro-motor, and, once the dies are properly adjusted, will go on turning out tablets of beautiful finish as long as the materials are supplied to the reservoir. One machine shown at the last Chemists' Exhibition in London had a capacity of 600 tablets a minute.

Tablets offer advantages to the patient also. They are portable, more easily swallowed than mixtures, powders, or pills, and a coating of sugar or chocolate disguises nauseous drugs, and renders them extremely palatable. Many can be bought at very little over the cost of the crude drug, and there can be no question of the superiority of borax

and chlorate of potash in this form over the old-fashioned gargles and lozenges. In the latter the medicament is too much diluted, and has but a mere momentary contact with the mucous membrane, if indeed it reaches it at all. The tablet, on the other hand, dissolves slowly, and thus brings a concentrated solution of the drug into contact with the diseased surfaces for a considerable time.

The charge has been brought against tablets that sometimes they are compressed so hard that they will not dissolve, and thus pass through the stomach unchanged. This can only happen if they are badly made, and the physician can readily test their solubility for himself by simply placing one in acidified water, when it ought, if perfectly manufactured, to disintegrate quickly into powder or dissolve. They are dispensed in a pill-box with written directions, or suitable printed labels in many different varieties can be obtained from dealers in druggists' sundries.

With club patients particularly, it never answers to prescribe tablets alone; the general rule is to give also some simple mixture as a placebo. Thus, suppose we prescribe tablets of Easton's syrup, then it might be something like the following:—

I.—Tab. syr. Eastonii (= 1 dr.) S.C. No. XII.

Labelled: 1 three times a day.

II.—Inf. Gent. Co. conc. 6 drs. in chloroform
water to 6 oz.

Labelled: 1 tablespoonful three times a day.

A little calculation will serve to show that tablets are more economical than powders obtained ready folded from the druggist. The price of ready-folded powders, whatever the composition, is never under 3s. per gross. On the other hand, phenacetin tablets, grs. v, can be got for 8s. per 1000, can be quickly and easily dispensed in a pill box, and, if the physician prefers the powder form as a more certain means of medication, he can give directions to the patient to crush each tablet before it is swallowed.

As the demand for tablets is increasing, they are

now made in various simple and compound forms, and either plain, sugar-coated, or chocolate-coated. The combinations to be obtained with even a moderate assortment of tablets are great, as there is no need to have the drugs intended to be administered all in one tablet. Suppose we wish to give soda, bismuth, and nux vomica in a case of dyspepsia, with a laxative, then the following combination of tablets would meet all indications :—

I.—Tab. Sodii bic. (grs. $2\frac{1}{2}$) \bar{c} . Bismuth subnit.
(grs. $2\frac{1}{2}$). No. XXIV.

In box labelled : Two, 3 times a day after meals.

II.—Tab. Tr. Nucis vom., 5 mins. (choc.-coated).
No. XII.

In box labelled : One, 3 times a day after meals.

III.—Tab. Cascara sag. ext., grs. 2. No. VIII.

In box labelled : Two at bedtime, when necessary.

Many medical men have the impression that tablets are expensive, but this they certainly are not. The majority are sold at very little over the cost of the crude drug. Take the case of Easton's syrup, the tablet *versus* the liquid preparation :—

16 oz. Easton's syrup =	125 doses	s. d.
of 1 dr. -	costs (about)	1 8
125 tablets (= 1 dr.) S.C. at 6s. 6d.		
per 1000 -	costs (about)	0 8
Saving -	-	1 0

The saving in dispensing 125 doses of Easton's syrup is thus 1s., to say nothing of the saving of time and trouble, and the greater accuracy of the dosage. Syr. ferri quin. et strych. phos. B.P. also will not keep ; it deposits and turns brown.

Lotions, Gargles, Douches, and Injections.—The profession has been slow to recognize the extreme convenience and utility of compressed tablets as a quick and accurate method for the extemporaneous preparation of lotions, collyria, gargles, nasal douches, aural douches, and vaginal and urethral injections. These can all be simply and quickly made by dropping one or more tablets, as the case may be, into the bottle and filling up with water. The larger tablets, as those for antiseptic lotions or vaginal injections,

require to be first of all roughly powdered. Or they may be dispensed in a chip-box with a printed label, "The Tablets," and written directions for use. They offer immense advantages in the way of portability, combined with great accuracy. The following are some of the chief tablets for this purpose :

Vaginal and Urethral Injections, Lotions, and Gargles.

Alum gr. 10	Mercuric biniod. gr. 1,
Alum and Zinc sulph.	gr. 8.75
15 grs. of each	Silver nitrate gr. 1, gr. 5
Alum gr. 30, Zinc gr. 15	Pot. permang. gr.
Boric acid gr. 6, gr. 15	1, 2, 3, 4, 8.75
Boric and Zinc sulphate	Pot. permang. and Alum
Carbolic acid gr. 5,	Tannic acid gr. 5
gr. 20, gr. 60	Zinc chloride gr. 1, gr. 5
Mercury perchloride gr. 8.75	Zinc permang. gr. $\frac{1}{8}$
Lead subacetate gr. 10	Zinc sulph. gr. 1, gr. 10
(For Gowland's lotion)	(Red lotion)
Lead and Opium	Zinc sulphocarb. gr. 5, gr. 10

Nasal and Aural Douches.

Sod. bicarb., Carbolic acid, and Borax
Compound Eucalyptol
Pharyngo-nasal

Saline solutions

Sodium chloride - - - - - 30 grs.
Sod. chloride and Sod. sulph. - of each 15 grs.
Sodium chloride compound

TABLET TRITURATES.

This form of administering medicines was devised by Dr. Fuller in America. The medicament is triturated with sugar of milk until a thorough and complete division and equal distribution has taken place. It is then made into a paste with varying proportions of spirit and water, which paste is pressed into holes in a metal or vulcanite plate. After drying, the finished tablets are pushed out by another plate having pegs on one side corresponding to the holes. A small portion of the sugar of milk becomes dissolved by the alcohol, and on drying recrystallizes into the moulded form. There is thus enough adhesiveness to bind the particles

together when dry, without interfering with the solubility when taken into the stomach. The perfect accuracy of the dose, the thorough subdivision of the medicament, the ready solubility and portability of the tablet triturate, commend them for the administration of potent remedies or those which are given in very small doses. The Pharmacopœia of the Central London Throat Hospital has a line of such triturates, but with most general practitioners their chief use will be found in their providing a speedy and accurate way of dispensing children's powders. (See PULVERES.)

TINCTURÆ—Tinctures.

A PLEA FOR THE USE OF CONCENTRATED TINCTURES OR FLUID EXTRACTS.

Tinctures can be prepared extemporaneously by adding standardized Fluid Extracts to the required quantity of alcoholic diluent. This method has the advantage over the B.P. processes of being economical, expeditious, and, above all, accurate, and the Fluid Extract being of one uniform strength, the tincture, of course, will also be so.

The advantage of Fluid Extracts in point of bulk is very strikingly shown by placing side by side 4 fl. oz. of Fluid Extract of Capsicum and a Winchester quart of Tinct. Capsici (B.P.). Both contain absolutely the same amount of active ingredient (capsicum), yet the bulk of the tincture is enormously greater than that of the extract.

Fluid Extracts are readily diluted down to B.P. strength with alcohol, or—if the practitioner prefers aqueous or non-alcoholic tinctures—with glycerin and water, or glycerin and chloroform water. It is, however, easy to dispense most of them in their original concentrated form, and dilute down potent preparations like aconite.

The following table is for the preparation of tinctures from Messrs. Parke, Davis & Co.'s fluids or fluid extracts.

Formulæ for Preparing B.P. Tinctures.

Name of Tincture.	Fluid or Liquid Extract employed.	Quantity required for 1 Imperial pint of Tincture.	To be diluted to 1 pint with Alcohol of strength stated.	Dose for Adult of Resulting Tincture.
TINCTURA		fl. oz.	%	minims. c.c.
*Aconiti	Aconite Root ..	1	70	5 to 15 0.3 to 0.9
*Aloes	Aloes	4	45	30 to 120 2 to 8
*Arnica	Arnica Root ..	1	70	
*Belladonnæ ..	Belladonna Root ..	1 1-3	60	5 to 15 0.2 to 0.9
Benzoini Comp.	Benzoin Comp. ..	6 2-3	90	30 to 60 2 to 4
*Buchu	Buchu	4	60	30 to 60 2 to 4
*Calumbæ	Calumba	2	60	30 to 60 2 to 4
*Camph. Comp. .	Camph. Comp. ..	2 1-2	60	30 to 60 2 to 4
Cannabis Ind. .	Ind. Cannabis ..	8	90	5 to 15 0.3 to 0.9
Cantharidis ..	Cantharides ..	1-4	90	5 to 15 0.3 to 0.9
*Card. Comp. ..	Card. Comp. ..	5	60	30 to 60 2 to 4
*Cascarillæ ..	Cascarilla	4	70	30 to 60 2 to 4
*Catechu	Catechu	6 2-3	60	30 to 60 2 to 4
*Chirata	Chirata	2	60	30 to 60 2 to 4
*Cimicifugæ ..	Cimicifuga	2	60	30 to 60 2 to 4
*Cinchonæ Comp.	Cinchona Comp. .	5	70	30 to 60 2 to 4
Cinnamomi ..	Ceylon Cinnam. .	4	70	30 to 60 2 to 4
*Colchici Sem. .	Colchicum Seed ..	4	60	5 to 15 0.3 to 0.9
*Cubebæ	Cubeb	4	90	30 to 60 2 to 4
*Digitalis	Digitalis	2 1-2	60	5 to 15 0.3 to 0.9
Ergotæ (B.P. '85)	Ergot	5	60	5 to 30 0.3 to 2
Gallæ (B.P. '85)	Galla	2 1-2	60	30 to 120 2 to 8
*Gelsemii	Gelsemium	2	60	5 to 15 0.3 to 0.9
*Gentianæ Comp.	Gent. Comp. ..	3 1-3	45	30 to 60 2 to 4
Hydrastis	Hydrastis	2	60	30 to 60 2 to 4
*Hyoscyami ..	Hyoscyamus	2	60	30 to 60 2 to 4
Jaborandi ..	Pilocarpus	4	45	30 to 60 2 to 4
Jalapæ	Jalap	4	70	30 to 60 2 to 4
Krameria	Krameria	4	60	30 to 60 2 to 4
Lavandulæ Co. .	Lavand. Comp. ..	5	90	30 to 60 2 to 4
*Lobeliæ (B.P. '85)	Lobelia	2 1-2	60	10 to 30 0.6 to 2
Lupuli	Hops	4	60	30 to 60 2 to 4
Myrrhæ	Myrrh	4	90	30 to 60 2 to 4
*Opii	Opium	2 3-4	45	5 to 30 0.3 to 2
Pyrethri	Pellitory	4	70	
*Quassia	Quassia	2	45	30 to 60 2 to 4
Quillaia	Soap-tree Bark ..	1	60	30 to 60 2 to 4
*Scilla	Squill	4	60	5 to 15 0.3 to 0.9
*Senegæ	Senega	4	60	30 to 60 2 to 4
Serpentaria ..	Serpentary	4	70	30 to 60 2 to 4
*Stramonii ..	Stramon. Leaves ..	4	60	5 to 15 0.3 to 0.9
Tolutana	Tolu	4	90	30 to 60 2 to 4
Veratri Viridis (B.P. 1885) ..	Verat. Viride ..	4	90	5 to 20 0.3 to 1.2
Zingib. Fortior (B.P. 1885) ..	Ginger	10	90	5 to 20 0.3 to 1.2

The majority of chemists have long recognized the extreme utility and great convenience of these

preparations. But their superiority also in point of stability, uniformity, therapeutical efficiency, and economy, is only being slowly recognized as yet by the general practitioner. They are official in the U.S. Pharmacopœia, and are slowly but surely creeping into our own. Prepared simply by percolation alone, the menstruum selected in each case is the one which experience has shown to be the most suitable for extracting all the active medicinal constituents of the drug. At the same time they are prepared of such a strength that 1 fl. dr. of Fluid Extract represents 60 grs. of the crude drug. Further, the majority can be obtained standardized, that is, adjusted to one uniform strength by assay, quite irrespective of the quality or quantity of the crude drug required in the manufacturing process, thereby stamping them with a hall-mark of reliability and therapeutic value as medicines. It is obvious that such fluid extracts, containing always a definite and constant amount of the active principle, alkaloid, resin, or whatever it may be, must of necessity be more reliable and efficient therapeutic agents than tinctures made from crude drugs of uncertain quality.

The amount of alcohol in some B.P. tinctures is absurdly large, and in some is even prejudicial. For instance, tincture of hyoscyamus with an alkali is often prescribed in gonorrhœa and vesical catarrh in $\frac{1}{2}$ dr. to 1 dr. doses. This represents more than a teaspoonful of brandy, and cannot but have a harmful influence. Even a little weak claret, as every practitioner knows, is often quite sufficiently irritating to cause the return of the gonorrhœal discharge, when it had to all appearances stopped completely. On the other hand, $7\frac{1}{2}$ minims of fluid extract represents all the medicinal principles contained in 1 dr. of tincture of hyoscyamus (B.P.), and the amount of alcohol is so infinitesimal as not to be worth taking into consideration.

The large amount of alcohol in B.P. tinctures adds nothing whatever to their medicinal efficiency, although greatly to the cost. As an argument in favour of the use of tinctures, it has been urged that they tend to keep sterile any mixture in which

they are present. But the same result may be attained just as well, and certainly less expensively, with a little glycerin or chloroform water. Chloroform water and glycerin are admirable in hot weather for keeping sweet and aseptic mixtures containing vegetable infusions. In the case of children, too, the large amount of spirit in B.P. tinctures is often prejudicial. When given for its therapeutic effects alcohol should be given separately, as well-matured brandy, whisky, etc., and not in a medicine bottle as crude spirit.

Perhaps one reason why these Extracts have not found more favour with the medical man is that they are difficult to measure exactly with the ordinary minim measure. Such a measure, however, is unsuitable; a graduated pipette is what should be used. A very good form is that known as Fletcher's **Autometric Stopper**, which may be described in the patentee's own words: "This ingenious contrivance combines the advantages of a permanent stopper, which can neither break nor get fixed, and a graduated measure, always ready for use, and reserved for the one fluid for which it is provided. No one who has experienced the ease, rapidity, and accuracy with which small quantities of liquids can be measured with it will ever return to the old minim measure. By loosening the stopper and slightly compressing the air-chamber attached, any required volume of liquid can be instantly withdrawn from the bottle. It being unnecessary to pour out any of the contents, no spilling or other waste of liquid can occur. Moreover, the inconvenience incidental to employment of the ordinary minim measure, with the necessary washing and frequent breakage, is entirely obviated." Glass stoppers often stick fast, waste one's time, and try one's temper. The autometric stopper has the advantage of cheapness when compared with glass-stoppered bottles, and it entirely prevents loss from evaporation. It is accurately graduated, and is supplied in sizes to measure 30 and 120 minims. Medical men who do dispensing will find it invaluable for rapid and accurate work. Elias' **Bimetric Minimeter** is another device of a similar character, in which the self-measuring principle is adopted, the graduations

on the pipette being in the Imperial system on one side and in the metric system on the other.

Fluid Extracts are also useful and much more economical than tinctures for the preparation of concentrated stock mixtures, as shown below:—

Table showing the Economy effected by Fluid Extracts.

16 fl. oz. of P., D. & Co.'s Fluid Extract.	Costs	It is equal in Drug Power to	Which will Cost about	And contains in EXCESS of the quantity con- tained in the Fluid Extract more than	Saving
Aconite Root- <i>Standardised</i> <i>Physiologically</i> Dose $\frac{1}{4}$ to 2 m.	7/4	16 Pints of B.P. Tincture Dose 5 to 15 m.	70/-	15 Pints of 70% Alcohol	62/8
Camphor Comp. 8 times stronger than B.P. Tinct.	7/4	8 Pts. of Tinct. Dose 30 to 60 m.	18/-	7 Pints of 60%	10/8
Capsicum, Dose from 1 m.	7/4	16 Pints of Tinct. Dose 5 to 15 m.	63/4	15 Pints of 70%	56/-
Digitalis, <i>Standardised</i> <i>Physiologically</i> Dose 1 to 2 m.	5/-	6 2-5 Pints of B.P. Tincture Dose 5 to 15 m.	20/-	5 Pints of 60%	15/-
Gelsemium, 0.5% total alka- loids. Dose 1 to 10 m.	6/-	8 Pts. of Tinct. Dose 5 to 15 m.	31/8	7 Pints of 60%	25/8
Ginger, Dose 5 to 20 m.	7/4	8 Pts. of Tinct. Dose 30 to 60 m.	36/-	7 Pints of 90%	28/8
Hydrastis, 2.5% Hydrastine Dose 10 to 30 m.	11/10	8 Pts. of Tinct. Dose 30 to 60 m.	35/-	7 Pints of 60%	23/2
Hyoseyamus, 0.1% alkaloids. Dose 5 to 10 m.	6/-	8 Pts. of Tinct. Dose 30 to 60 m.	31/8	7 Pints of 45%	25/8
Stramon. Lvs., 0.3% alkaloid. Dose 1 to 5 m.	5/-	4 Pts. of Tinct. Dose 5 to 15 m.	10/10	3 Pints of 45%	5/10

Fluid extracts occupy but little space (generally one-fourth or one-eighth of tinctures), and are to be relied upon absolutely, both medicinally and as regards their keeping properties. They also enable the medical man to avoid a multiplicity of preparations of the same drug, for, by adding the necessary diluent—alcohol, water, or syrup—they can be extemporaneously converted into tinctures, infusions,

decoctions, or syrups. Take **Fluid Extract of Squills** for instance: it thus represents no less than four galenicals—the tincture, acetum, syrup, and oxymel, all of which may be prepared from it extemporaneously as follows:—

Fluid Ext. of Squills

With 4 vols. 60 % alcohol	=	Tinct. Scillæ
„ 8 „ acetic acid dil.	=	Acet. Scillæ
„ Syrup and „	=	Syr. Scillæ
„ Honey and „	=	Ox. Scillæ

Tinct. Camph. Co. B.P.

Tincture of Opium	-	-	9 drs. 45 mins.
Benzoic acid	-	-	40 grs.
Camphor	-	-	30 grs.
Oil of Anise	-	-	$\frac{1}{2}$ dr.
Alcohol 60%	-	-	to 20 oz.

***Tinct. Camph. Co. Conc. 1 to 8

Tincture of Opium	-	-	9 oz. 6 drs.
Benzoic acid	-	-	5 drs. 20 grs.
Camphor	-	-	4 drs.
Oil of Anise	-	-	$\frac{1}{2}$ fl. oz.
Alcohol 60%	-	-	to 20 oz.

8 times B.P. strength. Dose: 2 to 8 mins. Very economical for dispensing and making up concentrated mixtures. Can also be diluted down to B.P. strength with glycerin and water (see page 92).

**Tinct. Cardam. Co. Conc. 1 to 4

Oil of Cardamoms	-	-	54 mins.
Oil of Carraway	-	-	1 dr.
Oil of Cinnamon	-	-	1 dr.
Cochineal	-	-	660 grs.
(Or, tincture of Cochineal (B.P.)	-	-	13 oz. 6 drs.)
Raisins, seedless	-	-	24 oz.
Alcohol 60%	-	-	to 15 oz.

Tinct. Chlor. et Morph. Co. (see Chlorodyne 1898).

**Tinct. Gent. Co. Conc. 1 to 6

Fluid extract of Gentian	-	-	12 oz.
Fluid extract of Orange	-	-	$4\frac{1}{2}$ oz.
Oil of Cardamoms	-	-	30 mins.
Alcohol 45%	-	-	to 20 oz.

Six times the strength of B.P. tincture. May be diluted down to B.P. strength with glycerin and water.

Tinct. Gent. c. Glycer. (Guy's)

Sliced Gentian root	-	-	-	12 oz.
Bitter Orange peel	-	-	-	6 oz.
Cardamoms	-	-	-	2 oz.
Glycerin	-	-	-	20 oz.
Alcohol 90%	-	-	-	10 oz.
Water	-	-	-	to 160 oz.

The cardamoms may be replaced by 36 mins. of ol. cardam. and the gentian and orange peel by the corresponding liquid extract. A very economical preparation.

****Tinct. Iodi B.P.**

Iodine	-	-	-	$\frac{1}{2}$ oz.
Potassium iodide	-	-	-	$\frac{1}{2}$ oz.
Water	-	-	-	$\frac{1}{2}$ oz.
Alcohol 90%	-	-	-	to 20 oz.

Iodine is soluble in spirit without the iodide (*Squire*). May be prepared concentrated 1 to 4 or aqueous.

*****Tinct. Nucis Vom. B.P.**

Liquid extract of *Nux vomica*, B.P.

(standardized)	-	-	-	4 oz.
Distilled water	-	-	-	6 oz.
Alcohol 90%	-	-	-	to 24 oz.

Filter.

A very satisfactory aqueous tincture can be made by diluting down the liquid extract with glycerinum dilutum (q.v.)

****Tinct. Rhei. Conc. 1 to 8**

Fluid extract of Rhubarb	-	-	-	16 oz.
Oil of Cardamoms	-	-	-	80 min.
Fluid extract of Coriander	-	-	-	2 oz.
Glycerin	-	-	-	to 20 oz.

1 part diluted with 7 parts of 60 % alcohol and $\frac{1}{16}$ vol. glycerin forms Tinct. Rhei. B.P.

TINCTURÆ AQUOSÆ—Aqueous Tinctures.

These have come much into use of recent years. All the principal firms of druggists now make them, but they are easily and quickly made from standardized Fluid Extracts by simply diluting them down to B.P. strength. Not only is economy thus secured, but the medical man can be absolutely certain that

his aqueous tinctures are of equal therapeutic value to tinctures prepared by the B.P. processes. By prescribing them he avoids the necessity of giving strong doses of alcohol in cases where it would be prejudicial. The best diluting agents are :

Tinctures prepared with :—

90 ⁰ / ₀	spt.	should be diluted with pure glycerin
70 ⁰ / ₀	„	„ „ glycerin 3 parts, water 1 part
60 ⁰ / ₀	„	„ „ „ and water equal parts
45 ⁰ / ₀	„	„ „ „ 1 part, water 2 parts

Glycerin is antiseptic and preservative of vegetable infusions, does not evaporate like spirit, and is a good solvent for alkaloids and active principles.

In some cases simple chloroform water will answer the purpose. Tinctures containing resins, such as *cannabis indica*, cannot be prepared in this way. *Tr. camph. co. aq.*, *Tr. capsici aq.*, *Tr. catechu aq.*, *Tr. zingib. aq.* require to be shaken before using, but sufficient spirit may be added to make a perfect solution. *Tinct. opii aq.* should be filtered to remove resins, narcein, and narcotin. It does not cause headache, nausea, and constipation to the same extent as the B.P. tincture does. Those aqueous tinctures which can be prepared in this manner are marked by an asterisk in the table of formulæ for B.P. tinctures.

UNGUENTA—Ointments.

Ointments made with plain, soft paraffin have advantages in some cases, and they are more economical than the official ointments. The facility with which they melt at body temperature and soak into the lint or other dressing is not always disadvantageous. *Paraffinum molle* (B.P.) is equal in every respect to the products sold under various fanciful registered names by the wholesale druggists.

*** **Ungt. Acidi Borici** (St. George's, B.)

Powdered Boric acid	-	-	-	1 part
Yellow soft Paraffin	-	-	-	7 parts

Ungt. Acidi Carbolici (C.)

Liquid Carbolic acid	-	-	-	4 drs.
Yellow soft Paraffin	-	-	-	9 oz.

****Ungt. Capsici (Cp.)**

Fluid extract of Capsicum	-	-	-	1 oz.
Lard	-	-	-	10 oz.

*****Ungt. Hamamelis (H.)**

Liquid extract of Hamamelis	-	-	-	1 oz.
Soft Paraffin	-	-	-	9 oz.

A good economical ointment for hæmorrhoids.

****Ungt. Hydrarg. Camph. (St. George's)**

Camphor	-	-	-	1 dr.
Spirit	-	-	-	q.s.
Mercurial ointment	-	-	-	1 oz.

An economical form of Scott's ointment.

Ungt. Sulphuris B.P. (S.)

Sublimed Sulphur	-	-	-	1 oz.
Lard	-	-	-	4 oz.

Ungt. Universale.

Oleate of Zinc	-	-	-	1 part
Powdered Boric acid	-	-	-	1 part
Purified wool-fat	-	-	-	2 parts
Soft white Paraffin	-	-	-	8 parts
Perfume	-	-	-	q.s.

Ointments are best made on a small scale by rubbing down the ingredients in a large mortar. Oil of Rose, Geranium, or Winter green may be used to perfume.

Ungt. Zinci Oxidi (Z.)

Powdered Zinc oxide	-	-	-	30 grs.
Soft Paraffin	-	-	-	1 oz.

VAPORES—Inhalations.

Dispensed with the following directions :—

"The inhalation : A measured teaspoonful to be added to a pint of nearly boiling water, and to be inhaled for five minutes every night and morning from a narrow-necked jug or suitable inhaler."

If intended for Eustachian medication, to the above directions is added : "About six times in the

five minutes well fill the mouth with steam, close the nostrils with the thumb and forefinger, shut the mouth, and blow down forcibly upon the fingers so as to drive the vapour toward the ears."—(C.T.H.)

Vapor. Benzoin

Compound tincture of Benzoin	-	1 dr.
Hot water	- - - -	to 1 pint

Vapor. Creosoti (T.H.)

Creosote	- - - -	- 80 mins.
Light Magnesium carbonate	-	30 grs.
Water	- - - -	to 1 oz.

1 dr. to a pint of hot water.

Vapor. Pini Sylvestris Conc. 1 to 4

Oil of Fir wool	- -	6 oz. 5 drs. 20 mins.
Light Magnesium carb.	-	3 oz. 2 drs. 40 grs.
Water	- - -	to 20 oz.

2 drs. diluted with 6 drs. water, of which 1 dr. to a pint of hot water.

VINA—Wines.

Vinum Colchici

Fluid extract of Colchicum root	-	4 oz.
Sherry	- - - -	to 1 pint

Vinum Ferri (Sick. C.H.)

Iron and ammonium citrate	- -	5 oz.
Alcohol 90 ⁰ / ₀	- - -	40 oz.
Water	- - - -	to 2 gallons

***Vin. Ipecac. (St. Bart's and L.H.)

Ipecacuanha, bruised	- -	1 oz.
Alcohol 90 ⁰ / ₀	- - -	4 oz.
Sherry	- - - -	4 oz.
Distilled water	- - -	to 20 oz.

Macerate 7 days, express and filter. Make up to 1 pint. Can be made by simple mixture if liquid extract of ipecac. 1 oz. be used instead of the bruised ipecac. Better than the B.P. vinum, which always deposits on keeping. Elixir ipecac. (q.v.) is a better formula.

FORMULÆ FOR PARISH PRACTICE.

This Pharmacopœia has been made simple and at the same time economical, and much facilitates the work of the medical officer. Eight-ounce bottles with half-ounce doses are generally used, as the mixtures in these cases have usually to be taken for some considerable time, and do not then require to be repeated so frequently. Some of the following formulæ are taken from Dr. Alfred Sheen's excellent book, *The Workhouse and its Medical Officer* (Bristol—John Wright & Co.), and are so simple that any intelligent nurse with a month's training might safely be entrusted with the dispensing of the commoner prescriptions. Formulæ which are exceedingly useful in this branch of professional work are :

Mist. Alkalina ammoniata	-	AA.
„ Ammon. rub.-	- -	AR.
„ Ammon. picrat.	- -	AP.
„ Quin. amorph.	- -	Q.A.
„ Tussis	- - -	T.

The first is suitable for a base for rheumatism, lumbago, etc., to which other remedies to suit individual requirements may be added.

Mist. Ammon. Carb. may be coloured either with carmine or with caramel, and flavoured with pimenta, cassia, gaultheria, or peppermint. It is a mild stimulant, and specially suitable for old chronics who are incurable, or whose malady is really senile decay. Having taken quantities of medicines over a lengthened period, they have acquired a sort of drng-habit, and are unhappy unless they are imbibing some sort of medicine.

It stimulates them, and, if it does no permanent good, yet it keeps them from harmful nostrums prescribed by friends.

Mist. Ammon. Pierate has a nice yellow colour and bitter taste resembling quinine. It probably does no permanent good, but has often a very pleasing effect on an old chronic. It is nothing more than a placebo, and very economical.

Mist. Quin. Amorph. may be described as the cheapest of cinchona tonics. Quinoidin or amorphous quinine is the mixed uncrystallized alkaloids, principally quinine and cinchonidine, of cinchona bark, just as treacle is the uncrystallized residue left in the manufacture of sugar. It has a dark colour, and appears opalescent by transmitted light.

Mist. Tussis Chronica resembles the Mist. tussis of the Royal South Hants Infirmary. It is an admirable mixture in the chronic chest complaints of old people, and in chronic bladder catarrh and enlarged prostate, often associated with chronic bronchitis. It will be found very frequently to do good when more orthodox and more expensive medicines fail. Other formulæ in the volume suggest themselves.

MIXTURES.

The letters refer to contractions which may be placed on the labels so as to quickly distinguish them without the necessity of having to refer to a prescription book. All the mixtures are most economically made from concentrated tinctures or fluid extracts. The quantities are for 8-oz. bottles of mixture. To calculate dose for age roughly, add 12 to the age and divide the age by the amount.

Mist. Acid. Astringens.

Dilute Sulphuric acid	-	-	-	3 drs.
Tincture of Opium	-	-	-	1½ drs.
Tincture of Capsicum	-	-	-	48 mins.
Water	-	-	-	to 8 oz.

Mist. Acid. Hydrochlor.

Dilute Hydrochloric acid	-	-	-	3 drs.
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Mist. Acid. Hydrocyan. dil. c. Sod.

Dilute Hydrocyanic acid	-	-	48 mins.
Sodium bicarbonate	-	-	3 drs.
Spirit of Camphor	-	-	48 mins.

Mist. Acid. Nitro-hydrochlor.

Dilute Nitro-hydrochloric acid	-	-	3 drs.
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Mist. Alkalina Ammoniacata Conc. (A.A.)

Potassium bicarbonate	-	-	7½ oz.
Ammonium carbonate	-	-	3 oz.
Sodium bicarbonate	-	-	3 oz.
Commercial Liquorice	-	-	1 oz.
Chloroform water	-	-	to 80 oz.

Dose : 2 drs. diluted.

Mist. Ammon. Acet.

Solution of Ammonium acetate			
(conctd. 1-7)	-	-	2 drs.
Red mixture (Mist. rubra, q.v.)			to 8 oz.

Mist. Ammon. Carb.

Ammonium carbonate	-	-	1 dr.
Spirit of Camphor	-	-	48 mins.

Mist. Ammon. Iodidi (A.I.)

Decolorized tincture of Iodine	-	-	5 to 10 mins.
Burnt Sugar	-	-	q.s.
Peppermint water	-	-	to ½ oz.

According to *Squire*, Tinct. iodi. decolorata B.P.C. is chemically ammonium iodide, which is less depressing than the potassium salt.

Mist. Ammon. Pter. Conc. (A.P.)

Ammonium picrate	-	-	20 grs.
Water	-	-	to 40 grs.

Dose : 1 dr. diluted.

Mist. Ammon. Rub. Conc. (A.R.)

Ammonium carbonate	-	-	2 oz.
Solution of Carmine	-	-	4 drs.
Chloroform water	-	-	to 40 oz.

Dose : 1 dr. diluted with chloroform water.

Mist. Cardiac Cone. (C.)

Tincture of Digitalis	-	-	4 oz.
(Or fluid extract Digitalis	-	-	½ oz.)
Ammonium carbonate	-	-	2 oz.
Chloroform water	-	-	to 30 oz.

Dose : ½ to 1 dr. diluted. Each drachm contains digitalis 8 mins., ammon. carb. 4 grs.

Mist. Cretæ Comp. (L.R. Inf.)

Pulv. pro. mist. cret. co.* (L.R.I.) 15 grs.
 Chloroform water - - - to 1 oz.

Dose : 1 oz. = $\frac{1}{4}$ gr. (nearly) of opium.

Mist. Diuretica (Di.)

Potassium acetate - - - 320 grs.
 Vinegar of Squills - - - 160 mins.
 Infusion of Broom (conctd. 1-7) to 8 oz.

Mist. Dyspeptica (M.D.)

Sodium bicarbonate - - - 2 drs.
 Tincture of Capsicum - - - $\frac{1}{2}$ dr.
 Magnesium sulphate mixture to 8 oz.

Mist. Eastonii Conc. (E.)

Solution of Iron perchloride - 2 oz.
 Quinine sulphate - - - 96 grs.
 Dilute Phosphoric acid - - - 3 drs.
 Solution of Strychnine - - - 6 drs.
 Chloroform water - - - to 12 oz.

Dose : 1 dr. diluted, which contains liq. ferri 10 mins.
 liq. strych. $3\frac{3}{4}$ mins., quinine 1 gr.

Mist. Ferri Aperiens Conc. (F.A.)

Iron sulphate - - - 2 oz. 5 drs.
 Magnesium sulphate - - - 20 oz.
 Dilute Sulphuric acid - - - $6\frac{1}{2}$ oz.
 Peppermint water - - - to 80 oz.

Dose : 2 drs. diluted.

Mist. Ferri Iodi (C.T.H.)

Potassium iodide - - - 1 gr.
 Iron ammonio-citrate - - - 1 gr.
 Syrup - - - 15 mins.
 Water - - - to 1 dr.

Note.—For children, when the more costly Syr. ferri.
 iod. is not considered necessary.

Mist. Gent. Acid.

Dilute Nitro-hydrochloric acid - 3 drs.
 Infusion of Gentian (conctd. 1-8) to 8 oz.

*** PULV. PRO M. CRETÆ CO.** (L.R. Inf.)

Powdered Opium - - - 2 drs.
 Precipitated Chalk - - - $\frac{1}{2}$ oz.
 Powdered Cassia - - - -
 Powdered Catechu - - - of each 8 oz.

15 grs. contain nearly $\frac{1}{4}$ gr. opium.

Mist. Gent. Alk.

Sodium bicarbonate	-	-	-	2 drs.
Infusion of Gentian (conctd. 1-8)	to 8 oz.			

Mist. Iodi (C.T.H.)

Tincture of Iodine	-	-	-	5 mins.
Sodium bicarbonate	-	-	-	10 grs.
Water	-	-	-	to 1 oz.

In tertiary syphilis, rheumatism, etc., where pot. iod. is not considered necessary.

Mist. Mag. Sulph. (M.M.S.)

Magnesium sulphate	-	-	-	8 drs.
Peppermint water	-	-	-	to 8 oz.

Mist. Menth. Pip. (M.M.P.)

Spirit of Peppermint	-	-	-	$\frac{1}{2}$ dr.
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Mist. Pot. Brom. Conc. (M.P.B.)

Potassium bromide	-	-	-	10 oz.
Fluid extract of Capsicum	-	-	-	$\frac{1}{2}$ dr.
Red mixture	-	-	-	to 60 oz.

Mist. Quinæ (M.Q.)

Quinine sulphate	-	-	-	8 grs.
Dilute Sulphuric acid	-	-	-	10 mins.

Mist. Quin. Amorph. Conc. (M.Q.A)

Quinoidine	-	-	-	40 grs.
Pure Sulphuric acid	-	-	-	q.s.
Water	-	-	-	to 80 oz.

Dose : 1 dr. diluted.

Mist. Rhei. c. Sod. (M.R.S.)

Bicarbonate of Soda	-	-	-	2 dr.
Powdered Rhubarb	-	-	-	1 dr.
Peppermint water	-	-	-	to 8 oz.

Mist. Rubra

Caramel (burnt sugar)	-	-	-	48 mins.
Water	-	-	-	to 8 oz.

Mist. Sod. c. Aniso (M.S.A.)

Sodium bicarbonate	-	-	-	2 dr.
Spirit of Anise	-	-	-	$\frac{1}{2}$ dr.

Mist. Stomachica Conc. (G.N.) (M.S.)

Rhubarb, sliced	-	-	-	1 $\frac{1}{2}$ oz.
Gentian, sliced	-	-	-	6 oz.
Ginger, bruised	-	-	-	1 oz.
Sodium bicarbonate	-	-	-	1 oz.
Boiling water	-	-	-	to 80 oz.

Macerate 4 hours and strain. When cool add the sod. bicarb. and shake up with 2 drs. chloroform. 2-oz. to an 8-oz. bottle, the dose of which is $\frac{1}{2}$ oz. Very easily prepared by using fluid extracts.

Mist. Tonica Conc. (M.T.)

Dilute Phosphoric acid	-	-	-	5 oz.
Solution of Iron perchloride	-	-	-	10 oz.
Solution of Strychnine hydrochloride	-	-	-	5 oz.
Water	-	-	-	to 60 oz.

Dose : 1 dr. diluted.

Mist. Tussis Chronica Conc. (M.T.C.)

Gum Acacia	-	-	-	2 oz.
Sugar or Golden Syrup	-	-	-	32 oz.
Wood tar	-	-	-	3 oz.
Mix and add				
Solution of Potash	-	-	-	2 oz.
Boiling water	-	-	-	24 oz.
Mix and add				
Water	-	-	-	to 80 oz.

Filter through muslin.

The tar may be washed with boiling water to remove acid matters, and a few drops of oil of cassia improves it. 1-oz. to an 8-oz. bottle, the dose of which is $\frac{1}{2}$ oz.

Confection of Sulphur

Sublimed Sulphur	-	-	-	1 oz.
Potassium bitartrate	-	-	-	$\frac{1}{2}$ oz.
Golden Syrup or Honey	-	-	-	3 oz.

Dose : A teaspoonful, in chronic rheumatism, piles, etc.

Confection Sulph. Co. (Chelsea Pensioner)

Powdered Guaiacum resin	-	-	1 oz.
Powdered Potassium nitrate	-	-	$\frac{1}{2}$ oz.
Sublimed Sulphur	-	-	2 oz.
Powdered Rhubarb	-	-	$\frac{1}{2}$ oz.
Powdered Mustard	-	-	2 oz.
Golden Syrup or Honey	-	-	q.s.

Mix.

Dose : A teaspoonful, in chronic joint affections, night and morning.

Antiseptic Liquid Soap (Syn. Ethereal Soap)

FORMULA 1.

Oleic acid	-	-	-	3 $\frac{1}{2}$ fl. oz.
Alcohol 90%	-	-	-	1 $\frac{1}{2}$ fl. oz.
Caustic Potash	-	-	-	q.s.
Oil of Wintergreen	-	-	-	10 mins.
Methylated Ether (0.720)	-	-	-	to 10 fl. oz.

Mix the first two ingredients and neutralize with the potash dissolved in water (about 3 drs. will be necessary). When cold add the ether and perfume.

Brit. Med. Journ. Sept. 10, 1904.

Antiseptic Liquid Soap

FORMULA 2.

Soft Soap	-	-	-	$\frac{1}{2}$ lb.
Carbolic acid	-	-	-	1 oz.
Oil of Wintergreen	-	-	-	20 mins.
Spirit	-	-	-	25 oz.
Oil of Cassia	-	-	-	1 dr.
Water	-	-	-	to 2 pints

Mix.

Haust. Purgans (Syn. House Physic.)

FORMULA 1

Powdered Aloes	-	-	-	320 grs.
Powdered Ginger	-	-	-	1 oz.
Commercial Liquorice	-	-	-	3 oz.
Boiling water	-	-	-	80 oz.

Infuse one hour and strain. When cool add 2 drs chloroform to preserve.

Dose : 1 to 4 tablespoonfuls.

FORMULA 2.

Magnesium sulphate	-	-	-	1 lb.
Caramel	-	-	-	2 drs.
Peppermint water	-	-	-	to 80 oz.

FORMULA 3.

Magnesium sulphate	-	-	-	1 lb.
Senna leaves	-	-	-	1 oz.
Ginger	-	-	-	$\frac{1}{2}$ oz.
Boiling water	-	-	-	to 80 oz.

Infuse one hour, strain, and when cool add chloroform q.s. to make it keep.

Dose : 2 oz.

Lot. Calcii Sulph. (U.C.H.)

Slaked Lime	-	-	-	-
Sublimed Sulphur	-	-	-	of each 4 oz.
Water	-	-	-	35 oz.

Boil together, evaporate to a pint and filter. Should be diluted with an equal quantity of warm water for use.

Lot. Calcii Sulph.

Sublimed Sulphur	-	-	-	1 oz.
Slaked Lime	-	-	-	1 oz.
Water	-	-	-	$\frac{1}{2}$ gallon

Boil together. "By far the best remedy for itch, which it cures rapidly and completely. Sponged over the entire body and allowed to dry on."—*Whitla*.

PIXOL.

(A cheap disinfectant.)

Tar	-	-	-	-	3 lb.
Green Soap	-	-	-	-	1 lb.
To this add slowly					
Caustic Soda	-	-	-	-	$3\frac{1}{2}$ oz.
Water	-	-	-	-	36 oz.

For use dilute 1 to 19 of water = 5% pixol.

SWEETENING and FLAVOURING AGENTS.**Ext. Glycyrrhizæ liq.**

Commercial Liquorice	-	-	-	1 lb.
Chloroform	-	-	-	2 drs.
Water	-	-	-	to 80 oz.

About half the strength of B.P. liquid extract, for which it forms an economical substitute.

Syrupus

Golden Syrup	-	-	-	2 lb.
Boiling water	-	-	-	1 pint

Aq. Cassiæ

Oil of Cassia	-	-	-	$\frac{1}{2}$ oz.
Alcohol 90%	-	-	-	to $2\frac{1}{2}$ oz.

Keep in a drop bottle. 6 to 8 drops (about) to 8 oz. water.

Aq. Menth. Pip.

Oil of Peppermint	-	-	-	$\frac{1}{2}$ oz.
Alcohol 90%	-	-	-	to $2\frac{1}{2}$ oz.

6 to 8 drops to an 8-oz. bottle to form peppermint water.

TABELLÆ—Compressed Tablets.

Pot. chlor., 5 grs., for use instead of a gargle for sore throat.

Pulv. opii, 1 gr., for cancer cases.

Phenacetin comp. antipyretic, for headache, neuralgia, etc.

Calomel and santolin, for worms in children.

Sulphur comp. (Garrod), for chronic joint affections.

Tablet triturate hyd. c. creta, for children's powders.

CHOCOLATE-COATED TABLETS.

Infants' Corrective (*Dr. Ives*).

Powdered Ipecac. $\frac{1}{50}$ gr.; Bism. submit. 1 gr.; Calomel $\frac{1}{20}$ gr.; Sodium bicarb. $\frac{1}{2}$ gr.

Anti-Constipation

Aloin $\frac{1}{5}$ gr.; Ext. Belladonna leaves $\frac{1}{4}$ gr.; Strychnine $\frac{1}{120}$ gr.; Ext. Cascara sagrada $\frac{1}{2}$ gr.

Cold, Laxative

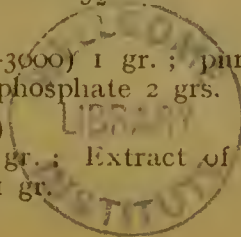
Quin. hydrobrom. 2 grs.; Dover's powders $2\frac{1}{2}$ grs.; Aloin and Calomel, of each $\frac{1}{8}$ gr.; powdered Capsicum $\frac{1}{2}$ gr.; Tinct. Aconite B.P. $3\frac{1}{2}$ min.

Digestive

Pepsin aseptic (1-3000) 1 gr.; pure Pancreatin 1 gr.; Calcium lactophosphate 2 grs.

Nerve Tonic (*Westbrook*)

Zinc phosphide, 10 gr.; Extract of Nux Vomica $\frac{1}{4}$ gr.; reduced Iron 1 gr.



APPENDICES.

ALCOHOL DILUTION TABLE.

Quantity of Diluted Alcohol desired.	Strength of Diluted Alcohol required.				Add sufficient Distilled Water to make cooled to 60° F.
	70 per cent. Use of 90 per cent. Alcohol.	60 per cent. Use of 90 per cent. Alcohol.	45 per cent. Use of 90 per cent. Alcohol.	20 per cent. Use of 90 per cent. Alcohol.	
Fl. oz.	Fl. oz.	Fl. oz.	Fl. oz.	Fl. oz.	Fl. oz.
5	3 8-9	3 1-3	2 1-2	1 1-9	5
10	7 7-9	6 2-3	5	2 2-9	10
12	9 1-3	8	6	2 2-3	12
16	12 4-9	10 2-3	8	3 5-9	16
18	14	12	9	4	18
20	15 5-9	13 1-3	10	4 4-9	20
25	19 4-9	16 2-3	12 1-2	5 5-9	25
30	23 1-3	20	15	6 2-3	30
40	31 1-9	26 2-3	20	8 8-9	40
50	38 8-9	33 1-3	25	11 1-9	50
75	58 1-3	50	37 1-2	16 2-3	75
80	62 2-9	53 1-3	40	17 7-9	80
100	77 7-9	66 2-3	50	22 2-9	100
160	124 4-9	106 2-3	80	35 5-9	160

1/3 fl. oz. = 160 minims.

1/9 fl. oz. = 53 1-3 minims.

PERCENTAGE SOLUTIONS.

Per- centage.	Weight in grains for one dram.	Weight in grains for one ounce.	Weight in grains for one pint.	Parts.
1	·547	4·375	87·5	1-100
2	1·094	8·750	175·0	1-50
3	1·640	13·125	262·5	1-33·33
4	2·187	17·500	350·0	1-25
5	2·734	21·875	437·5	1-20
6	3·281	26·250	525·0	1-16·66
7	3·828	30·625	612·5	1-14·28
8	4·375	35·000	700·0	1-12·5
9	4·922	39·375	787·5	1-11·11
10	5·468	43·750	875·0	1-10

This Table has been constructed upon the officially recognized method for making solutions, and has been arranged on the basis of one gram of solid in 100 grain measures (110 minims) of solvent.

Table for the Extemporaneous Preparation of Solutions of various strengths.

In one Imperial pint of water, dissolve the amount of medicament indicated below, to make the following approximately correct solutions :

For	1-50	% or 1 in	5000	solution, use	1½	grains of the medicament.
For	1-20	% or 1 in	2000	"	4½	"
For	1-10	% or 1 in	1000	"	8½	"
For	1-4	% or 1 in	400	"	21½	"
For	1-2	% or 1 in	200	"	43½	"
For	1	% or 1 in	100	"	87½	"
For	2	% or 1 in	50	"	175	"
For	4	% or 1 in	25	"	350	"
For	5	% or 1 in	20	"	437½	"
For	10	% or 1 in	10	"	875	"

To make smaller quantities of any solution, use less water, and reduce the medicament in proportion to the amount of water employed: the one-half Imperial pint of a 1-per-cent. solution will require 43½ grains of medicament.

Table showing the Percentage Equivalent in Grains per Fluid Ounce.

Percentage.		Grains per fluid ounce.	Percentage.		Grains per fluid ounce.
10.0	..	43.75	1.9	..	8.3
9.5	..	41.55	1.8	..	7.9
9.0	..	39.4	1.7	..	7.45
8.5	..	37.2	1.6	..	7.0
8.0	..	35.0	1.5	..	6.55
7.5	..	32.8	1.4	..	6.1
7.0	..	30.6	1.3	..	5.7
6.5	..	28.45	1.2	..	5.25
6.0	..	26.25	1.1	..	4.8
5.5	..	24.05	1.0	..	4.4
5.0	..	21.9	.9	..	3.95
4.5	..	19.7	.8	..	3.5
4.0	..	17.5	.7	..	3.05
3.5	..	15.3	.6	..	2.6
3.0	..	13.1	.5	..	2.2
2.5	..	10.95	.4	..	1.75
2.0	..	8.75	.3	..	1.3

SOLUBILITIES IN WATER.

Acid, boric	-	-	1 in 30 cold, 1 in 3 boiling
,, citric	-	-	1 in ¾ cold, 1 in ½ boiling
,, picric	-	-	1 in 90
,, salicylic	-	-	1 in 760
,, tannic	-	-	2 in 1
Acetanilide	-	-	1 in 200 cold, freely in alcohol
Alumen	-	-	1 in 11 cold, 3 in 1 boiling

Solubilities in Water, continued.

Ammon. brom.	-	- 1 in $1\frac{1}{2}$
„ carb.	-	- 1 in 4
„ chlor.	-	- 1 in 3
„ iod.	-	- $1\frac{1}{3}$ in 1
Antipyrine	-	- 1 in 1
Cupri sulph.	-	- 1 in 3
Calcii chlor.	-	- very sol.
Chloral hydrat.	-	- 3 in 1
Ferri et ammon. cit.	-	- 2 in 1
„ „ quin.	„	- 2 in 1
„ sulph.	-	- 1 in $1\frac{1}{2}$
„ tart.	-	- 1 in 4
Mag. sulph.	-	- 10 in 13
Pot. acet.	-	- 2 in 1
„ bicarb.	-	- 1 in 4
„ bromide	-	- 1 in 2
„ carb.	-	- 1 in $\frac{3}{4}$
„ chlor.	-	- 1 in 16 cold, 1 in 2 boiling
„ cit.	-	- 10 in 6
„ iod.	-	- 4 in 3
„ nitrat.	-	- 1 in 4 cold, $2\frac{1}{2}$ in 1 boiling
„ permang.	-	- 1 in 18
„ tart.	-	- 10 in 8
„ tart. acid	-	- 1 in 200 cold, 1 in 18 boiling
Phenacetin	-	- insol., 1 in 16 alcohol
Hydrarg. perchlor.	-	- 1 in 16, 1 in $1\frac{1}{2}$ glycerin
Salicine	-	- 1 in 20
Sulphonal	-	- 1 in 450, 1 in 15 boiling
1 in 50 alcohol		
Sod. benz.	-	- 1 in 2
„ bicarb.	-	- 1 in 12
„ brom.	-	- 5 in 6
„ carb.	-	- 5 in 8
„ hypophos.	-	- 1 in 1
„ iod.	-	- 11 in 6
„ phosph.	-	- 1 in 6
„ salicyl.	-	- 1 in 1
„ sulph.	-	- 1 in 2.8
Zinc chlor.	-	- 1 in $\frac{1}{2}$
„ sulph.	-	- 1 in 1
„ sulphocarb.	-	- 1 in 2

SOLUBILITIES OF ALKALOIDS IN GLYCERIN.

(Watt's Dictionary, 2nd supp., p. 563.)

100 parts by weight of glycerin dissolve at ordinary temperatures :—

Parts by weight.	Alkaloid.
3	Atropine
33	Atrop. sulph.
2·2	Brucine
·5	Cinchonine
·45	Morphine
20	Morph. acet.
20	„ hydrochl.
·25	Strychnine
22·5	Strych. sulph.

SCALE OF DOSES AT DIFFERENT AGES.

(St. Bartholomew's.)

(Guy's, London, and Middlesex have similar tables.)

Half the dose for an adult may be considered suitable for a child of about 12, half of this for a child of 4, half of this again for a child of 2, half of this again for a child 9 months to 1 year. Thus :—

Age—	Adult.	12 years.	4 years.	2 years.	9 to 10 mos.
Dose -	1	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$

For intermediate ages, when the dose for an adult is a draught of 1 fluid ounce, the following may be a sufficient guide :—

Age.	Dose.
9 months to 1 year	- - - $\frac{1}{2}$ fl. dr
2 years	- - - 1 „ „
3 „	- - - $1\frac{1}{2}$ „ „
4 „	- - - 2 „ „
8 „	- - - 3 „ „
12 „	- - - 4 „ „
17 „	- - - 6 „ „
Adult	- - - 1 fl. oz.

WEIGHTS AND MEASURES.

WEIGHTS.

AVOIRDUPOIS (in Purchasing.)

1 grain	-	gr	
1 ounce	-	oz.	= 437½ grs.
1 pound	-	lb.	= 16 oz. = 7000 grs.

APOTHECARIES' WEIGHT (Dispensing.)

1 grain	-	gr.	
1 drachm	-	dr.	℥ = 60 grs.
1 ounce	-	oz.	℥ = 8 drs. = 480 grs.

CAPACITY.

1 minim	-	min.	
1 fluid drachm	fl. dr.	=	60 mins.
1 fluid ounce	fl. oz.	=	8 fl. drs.
1 pint	O.	=	20 fl. oz.
1 gallon	C.	=	8 pints

RELATION OF WEIGHTS TO MEASURE.

1 fl. oz.	=	1 oz.,	or	437.5	grs. of water
1 pint	=	1.25	lb.,	„	8750 „ „ „
1 gallon	=	10	lbs.	„	70,000 „ „ „

In formulæ solids are always understood to be by weight, and liquids by measure.

IN PRESCRIBING

1 teaspoonful	=	1 dr.
1 dessertspoonful	=	2 drs.
1 tablespoonful	=	4 drs.
2 tablespoonfuls	=	1 oz.
1 wineglassful	=	2 oz.

MEMORANDA
AND
PRIVATE FORMULÆ.

West Hepatoc

12

Lochin bicolor 37

St. Gerardo 37

Lip. P. 37

St. Francis 37

Ag. 11 Pa 37

37 ter die a c. 37

West Kew. 37

L. 9. 37

L. 37

L. 37

Ag. 11 Pa 37

37 ter die p. c. 37

Great Deck

17

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

Get. Get 30

First Petition

First Petition 31

Second Petition 31

Third Petition 31

Fourth Petition 31

Fifth Petition 31

Sixth Petition 31

Seventh Petition 31

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